Industrial Equipment News

FOUNDED 1933

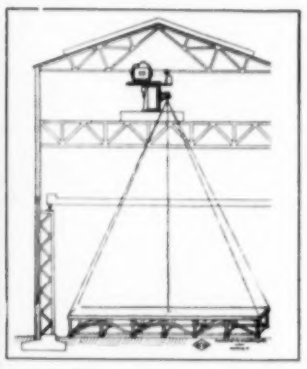
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 9533**

LAYOUT . . Optical equipment projects drawing over large work area

Source: AMPOWER CORPORATION
50 Broad St., Room 1525, New York 4, N. Y.



Developed in Germany

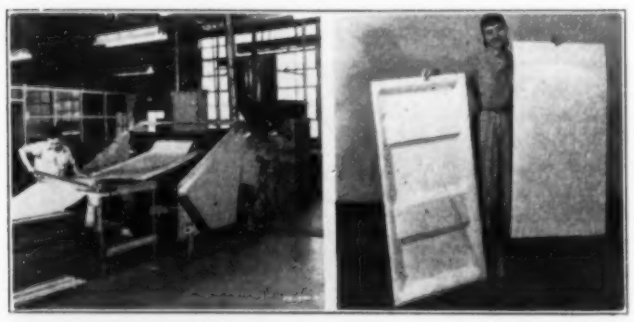
Lumotrace trade names new optical equipment originally developed in Europe in connection with lofting operation in construction of ships. It is capable of spreading the image from a 4 by 5-in. negative over a large work area so operators can trace the drawing outlines on the work surface.

The operation starts with a drawing made to a 0.1-in. scale. This drawing is photographed for reproduction on the 4 by 5-in. negative plate and the plate is positioned in the optical equipment that mounts overhead. Position of the plate can be adjusted at a control station at floor level so the image coincides correctly with the work surface. The projector enlarges the negative 100 times in linear dimension or 10,000 times in area and projects it without distortion.

If you write maker identify as **IEN - 9534**

PLASTIC . . Thermoplastic sheet for product forming by vacuum process

Source: CHICAGO MOLDED PRODUCTS CORP.
2715-19 N. Normandy Ave., Chicago 35, Ill.



Company supplies the sheets for you to form

Moderate cost of the sheet itself and low cost of vacuum process forming tools make the company's new Campco S-300 sheet material suitable for a limitless number of applications. The sheet is a copolymer of polystyrene and rubber. It is made by extruding in continuous equipment. Width ranges from 26 to 58 inches. There is no limit to the length. Thickness ranges from 0.005 to 0.125 inch.

Surface finish is high gloss on one or both sides, the latter particularly in the thinner gages. Specific gravity is 1.04 to 1.06. Sheet prices ranges from 55 to 70 cents per pound, the price decreasing as thickness is increased. White is the standard color with any other color subject to specification.

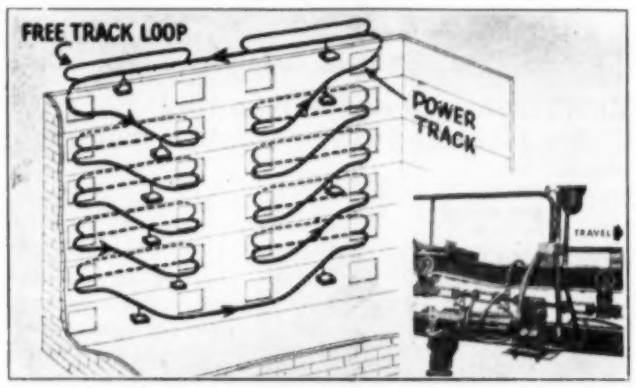
The material is non toxic. It machines readily, is a good base for paint. It can be vacuum coated with aluminum or silver. Tensile strength is 4,000 to 5,000 lb. per square inch. The sheet softens under heat for forming at about 163 deg. F.

YOUR HELP IS NEEDED
FOR THE COMMUNITY CHEST DRIVE

If you write maker identify as **IEN - 9535**

CONVEYING . . Overhead chain handles work carriers on six floors

Source: JERVIS B. WEBB CO.
8915 Alpine Ave., Detroit 4, Mich.



Illustrated specifications upon request

Trolley supported chain rides an I-beam track in a closed loop in this new installation of the company's conveyor equipment to serve six floors of a building. The chain is equipped with downward pointing fingers at regular intervals to engage load carrying trolleys that ride in a track beneath it. This track parallels the chain between floors and over sections above each of the floors.

It switches off into two free loops on each floor in electrically operated selective arrangement. The equipment takes the place of elevators to handle work from one floor to another in 800-lb. capacity loads at a travel speed of about 35 fpm.

Selector switches on each carrier are positioned by an operator while the carrier is standing on one of the free loops. A button is then pressed to release the carrier from its blocked position in the loop so it rolls by gravity to the switch through which it enters the main line. This switch opens when an unoccupied conveyor finger comes by and the carrier enters the main line to engage the finger and be moved along until the preselected location has been reached.

The entering switch to the loop at this position opens to take the carrier from the main line and stop it at an unloading position in the loop. It is released from this position to proceed by gravity to the loading position in that loop at the option of the operator at that particular loop.

Empty carriers can be released from a loop to enter the main line and ride upon it until an operator at any other location selects it to enter a loop for loading purposes. The portions of the conveyor that ride from one floor to another are mounted on the outside of the building where they do not occupy valuable floor space. Capacity of the installation is 150 carriers in active service.

If you write maker identify as **IEN - 9536**

FILTERING . . Porous molded plastic for highly corrosive liquids and gases

Source: M. W. KELLOGG COMPANY
P. O. Box 469-A, Jersey City 3, N. J.

Good for venting and gas sparging

Kel-F, the company's chemically inert plastic, is now available in porous form in discs from ½ to 12 in. in diameter, sheets to 24 by 24 inches. Thickness is $\frac{1}{16}$ and ⅛ inch. Integral rims of the solid material are included for structural strength. The fine pore size removes particles larger than 5 microns. Water passes through at 100 fpm. per sq. ft. of filter area at 10-lb. pressure differential.

Fuming nitric acid, hydrogen peroxide, aqua regia, alkalis and organic chemicals can be filtered continuously. The material is particularly suited as a venting medium for containers handling corrosive fluids and for electronic equipment employed in marine service. It is non-wetting and has zero water absorption. In venting service, the element permits passage of air or vapor but blocks splashed liquids. The material can be employed in a temperature range between minus 320 and plus 390 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

SEPTEMBER, 1953
VOL. 21 No. 9

PRODUCT FINDING INDEX

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES ... 6, 58, 63
Adhesives ... 82*, 98*
Aerating ... 10
Air Conditioning ... 124*
Alloys ... 93, 116
Anchors ... 103, 121*
Assembling ... 56

BALANCING ... 16
BALLS, Metal ... 54
Plastic ... 119
Barriers, Parking Lot ... 48
Batteries ... 52
Battery Chargers ... 60
Bearings ... 2, 5, 20, 35*, 46, 52, 54, 55, 65, 67, 87, 104, 118*, 122
Bellows, Metal ... 70, 89
BELTS, Conveyor ... 27, 36, 69, 124*
Fastenings ... 77, 113*
Transmission ... 8*, 71, 80, 83, 127
Benches ... 40, 125
Bending ... 7, 20, 31, 36, 37, 67*, 92, 97, 120
Bins ... 3, 19
Blowers ... 32, 70, 90, 104*, 108, 114
Boards, Bulletin ... 91*, 96
Boilers ... 66, 82*, 103
Bolts ... 53, 103, 107, 110
BOOTHS, Telephone ... 50
Spray ... 55
Boring ... 28, 51, 121*
Boxes ... 18*, 23, 30, 82, 95, 110*
Brakes ... 5, 10, 99
Brazing ... 2, 24*, 50
Bronze ... 43, 93, 112*
Brushes ... 27*, 38, 71, 81, 128
BUILDING ... 6*, 6, 39, 49*, 52
Bundling ... 71
Burring ... 30, 72, 80, 108*, 121*
Bushings, Drill ... 30, 67

CABINETS ... 4, 40, 41, 61*, 82
Cable, Electric ... 15, 53, 74, 82*
Calculating ... 22*, 48, 77
Carbon Parts ... 50, 82*
Cars ... 105
Casters ... 18*, 25, 58, 76, 82*, 107
Castings ... 3, 47
Cement, Iron ... 8
Centers, Machine ... 50
Centrifugals ... 54
Ceramics ... 47*
CHAIN, Bead ... 117
Conveyor ... 7
Fittings ... 106
Tools ... 64
Transmission ... 7, 112
Chairs ... 54, 121
Chucks ... 44, 62, 120
Circuit Breakers ... 15, 37, 81*, 124
Clamps ... 5*, 8, 9*, 26, 45, 58, 64, 74, 79, 95, 98, 102, 119
CLEANING, Blast ... 34, 84, 114, 115
Blower ... 104*, 114
Floor ... 20*, 22, 60, 68, 81, 87*, 120
Materials ... 10*, 12*, 29, 45*, 71*, 80*, 116
Rotary ... 42
Spray ... 28, 59*, 120*
Vacuum ... 22, 36, 50, 71*, 85, 102, 103*, 111, 114, 120
Vapor ... 20
Washing ... 55
Clothing, Protective ... 33*
Clutches ... 45, 86
Coating ... 56
Communicating ... 38*, 46, 50, 54, 64*, 110*
Compressors ... 8, 20, 41, 82*, 86, 88, 90
Condensate Return Equipment ... 61
Conductors, Electric ... 3, 15, 53, 74, 78
CONDUIT ... 27*, 121
Fittings ... 79, 125
Connectors, Electric ... 31, 38, 55, 61, 64, 74, 79, 82*
Construction ... 77*
Contacts, Electric ... 54*, 86
CONTROLS
Electronic ... 2*, 24*
Engine ... 57
Flow ... 46, 99, 103
Furnace ... 23*
Liquid Level ... 60*, 98, 128
Machine Tool ... 116
Positioning ... 43, 78*
Pressure, ... 41*, 53, 73, 75*, 88, 118
Process ... 7, 19*, 81, 103
Production ... 19
Pump ... 90*
Temperature ... 2*, 46, 74, 125
Voltage ... 113*
CONVEYING, Belt ... 7, 27, 36, 69, 83*, 124*, 127*, 127
Chain ... 7, 83*
Flight ... 95*
Overhead ... 1*, 6, 14, 15, 24, 37, 42, 113, 118*
Pneumatic ... 10, 34
Roller ... 6, 7, 24, 127
Screw ... 18, 57
Wheel ... 34*, 109*, 128
Cooling ... 5, 33, 55*, 68, 102, 127
Corrosion Proofing ... 6*, 26, 69, 78*, 79, 83*, 90, 94, 101, 109*, 127*, 127
Counting ... 10*, 43, 54*, 62, 112
Couplings, Shaft ... 69
Covers, Dock ... 12*, 21, 119
CRANES ... 61, 83*, 105*, 107, 113
Brakes ... 10
Creams, Hand ... 43*
CUTTING, Abrasives ... 59*, 62, 114
Machines ... 11, 34
Tools ... 5, 64, 70, 72, 83*, 83, 92, 106*
Cylinders, Power ... 18, 28, 97

DEGREASING ... 20
Detectors, Metal ... 5
Die Castings ... 88, 101
Dispensing ... 27, 37*, 63*, 65*, 97
DOORS ... 14
Hardware ... 124
Operators ... 14, 15*, 16, 22
Drafting ... 3, 16*, 25, 100
DRILLING
Bushings ... 30, 67, 83*
Heads ... 16, 34, 107*
Jigs ... 14, 56*
Machines ... 9, 31, 109, 122
Tools ... 28, 29, 35*, 62*, 66, 86, 104*, 117
DRIVES
Adjustable Speed ... 13, 68
Components ... 3, 5, 7, 8*, 22*, 24*, 28, 40*, 45, 47, 56, 71*, 71, 80*, 80, 83*, 83, 84, 86, 89, 99, 112, 125*, 127
Speed Reducer ... 9, 19*, 20, 33, 40, 41*, 55, 67, 68, 89*, 93, 94, 115
Variable Speed ... 5, 24, 26, 33, 69, 75, 79, 110*, 115*
Drying ... 6*, 11*, 20, 29*, 46, 83, 101*, 112*, 122*
DUCT, Electric ... 78
Ventilating ... 78
Dust Collecting ... 11, 14, 34, 55, 85, 87, 104, 114

ELECTRONIC PRODUCTS ... 53
Elevators ... 24, 44, 83*, 95*, 102*, 120
Engines ... 23, 49, 84*, 111*
Engraving ... 86, 115
Equipment ... 84*
Erasers ... 100
Etching ... 118*
Expositions, Industrial ... 50*, 84
Exterminating ... 5*
Extinguishing ... 2, 63*, 87*, 93*, 93, 117*, 120
Extracting ... 42

FABRICATING ... 25*, 32*, 127
Fabrics ... 25*, 60, 65*, 84*
Fans ... 56*, 67, 70, 84, 104, 128
Fastening Tools ... 17*, 84*, 113
Fastenings ... 9*, 13, 25*, 25, 34, 44, 50, 51, 53, 62, 75, 80, 89, 94, 103, 107, 110, 111, 113, 115, 121*, 121, 123
Faucet Repair Parts ... 12
Feeding ... 9, 60*, 80*, 84*, 108, 126
FELT ... 37
Fence ... 19, 112
Fibre ... 58
File Resharpening Service ... 62
Filing ... 45, 124
Filling ... 33
FILTERING, Air ... 4, 11*
Liquid ... 1*, 80, 82, 84*, 85*, 109
First Aid ... 17
Flaring ... 92
Flexible Shaft Equipment ... 68, 116
Floats ... 28, 84*, 96
Floors ... 7, 20*, 32*, 40, 44, 45, 48*, 63, 67*, 78, 84*, 111, 114, 118, 125, 126, 128
FORGING ... 84*
Forming ... 65
Fountains, Drinking ... 68
Furnaces ... 7*, 27, 77, 89, 124
Furniture ... 40, 54, 116*, 121, 125
Fuses ... 8, 61

Reader Service Form ... **16, 112**
Useful Information ... **24**
New Literature ... **82**
Ideas For You ... **64**
"I Wish I Had" ... **128**

GAGES
Dimensional ... 25*, 40, 45*, 46*, 48, 52*, 59, 82, 85, 86*, 102
Layout ... 95*
Material Level ... 43
Pressure ... 32, 61, 76*, 106
Strain ... 57
Gaskets ... 3*, 49, 56, 92, 106
Gear Cutting ... 106*
Gears ... 47, 84
GENERATORS, Electric ... 124, 126*, 126
Steam ... 66, 103
Glare Proofing ... 7*
Glass ... 86*, 118
GLOVES ... 47, 51, 92, 96
Repair Service ... 96
Goggles ... 14, 40*, 50
Governors ... 57
Grabs ... 8, 119
Grating, Floor ... 7, 20*, 44, 48*, 63, 78
GRINDING Attachments ... 16, 23*
Heads ... 31
Machines ... 16, 68, 91, 116, 122
Tools ... 2*, 25*, 25, 45, 65, 66, 79*
Wheels ... 72*, 101, 121
Guides, Saw Blade ... 114

HAMMERS ... 35, 67, 82, 86*, 94, 128
Handles ... 73, 101
Handling ... 8, 10, 14, 16, 18*, 23, 30, 33*, 35, 39*, 44*, 52, 54, 65, 76, 78, 79*, 82, 89, 95, 110*, 119
Hard Facing ... 43
Hardboard ... 58
HEADS, Drill ... 16, 34, 107*
Tapping ... 34
Heat Treating ... 7*, 27, 77, 89, 124
HEATING, Elements ... 5, 7*, 10, 11, 25, 38, 86*, 96, 118, 127*
Flame ... 36, 65
High Frequency ... 108*, 117
Liquid ... 23, 38, 57
Oven ... 62*
Space ... 19, 44, 56, 63*, 95, 109, 111, 114, 119*
Plates ... 33*, 38
Helmets ... 51
Hoists ... 13*, 39, 47, 68, 71, 72, 83, 93, 104, 113
Holders, Tool ... 51
Hoppers ... 9, 35, 39*, 52, 65
HOSE ... 39, 59, 81, 87, 107
Fittings ... 9*, 26, 29, 39, 47, 74, 81, 94, 95, 102, 123
Humidifying ... 109

IMPREGNATING ... 52
Indicators, Temperature ... 108
Ingot Stripping ... 106
Ink ... 17
INSULATING, Electric ... 14*, 26*, 30, 31*, 42, 47*, 70*, 72, 73, 79*, 81*, 107*
Thermal ... 17, 86*
Isolating, Vibration ... 12, 79

(Continued Over)

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* .....
- ☐ *Production, Mr.* .....
- ☐ *Engineering, Mr.* .....
- ☐ *Product Design, Mr.* .....
- ☐ *Purchasing, Mr.* .....
- ☐ .....

JACKS.....2, 7, 12*, 31, 39, 63, 86*
JOINTS, Pipe 28, 89*, 116
Shaft 56

LABELS.....17, 22, 59, 115, 119, 123
Ladders 19, 22, 126
Lapping 116*
Latches 62
LATHES 8, 31
Tools 36
Layout.....1*, 17*, 45*, 52*, 60*, 110
Lighting 3, 26*, 27, 34*, 46, 51*, 70, 86*
Lights, Indicating 102
Lockers 81, 116
Locknuts 75, 86*, 121
Locks 88*
Lockwashers 51, 111
Louvers 23
LUBRICATING Equipment...38, 71, 73, 74*, 88*
Materials 3, 4, 10, 13, 16*, 87*, 118

MACHINERY 88*, 96, 98
Magnetic Materials 110
Magnets 5*, 39*, 45*, 128
Magnifying 60
Management 40*
MARKING Machines 41, 79, 86, 87, 102, 115, 118*
Materials 11, 17, 22, 59, 65*, 101, 115, 119, 122*
Tools 7, 21*, 102, 120
Masking 125
Matrix Materials 116
Mats 67*, 70
Melting 11
METAL Data 3
Design Strengthened 13
Laminated 53
Parts 9, 88*
Perforated 106
Powders 110
Shapes 108
Metal Treating 66
METERS, Air Velocity 88
Electric 42*, 42, 105
Flow 65, 88*
Liquid 24, 34, 56, 90
Noise 26*
pH 18, 96
Process 106*
Microfilm Service 99, 110
Microscopes 96
MILLING Cutters..3*, 70, 72, 83, 88*
Heads 31
Machines 37, 51, 92
Spacers 6
Mixing .27*, 48, 57, 59, 76, 109*, 116*
Molybdenum 4
Monorail 6
MOTORS, Control.11, 12, 37, 44, 123
Electric 36, 33, 41*, 41, 43, 55, 88*, 89*, 126
Hydraulic 39, 66
Mowing 92
Mufflers 54

NAILS 9*
Nameplates..8*, 60, 82, 84, 104*, 123
Nickel Alloys 3, 26*
Notching 12
Nozzles 23, 30, 34, 51
Numbering 79, 102
Nuts 53, 80, 110

OIL CONDITIONING 80
Oscilloscopes 66
Ovens 29*, 55, 62*

PACKAGING
Containers 100*
Equipment 33, 34*, 49, 72
Materials.22*, 31, 38, 58, 79, 83, 90
Packings 56, 73, 80, 95*
Pails 78
Paint Conditioning 48
PAINTING Equipment 21*, 21, 22, 46, 66*, 100*
Materials 26
Pallets 33*, 35
Panelboards 15
Pencils 3
Photographing 26*
Pins 110, 111, 123
PIPE 36*, 42*, 49, 53, 118
Coils 25, 38
Finned 95
Fittings..11, 28*, 28, 29, 32, 33, 36*, 57*, 77*, 89*, 90*, 93, 116, 118
Fittings, Jacketed 109
Jacketed 109
Pistons 66
PLASTIC Materials.....1*, 23, 48, 90*, 97, 122
Products 49*, 60, 66*, 75*, 77, 101, 119, 122
PLATES, Floor 45
Surface 52*
Plating 9*, 56*, 108
Polishing.....6, 58*, 66, 115*
Powder Metal Parts 52, 67
Power Units, Hydraulic 33
PRESSES, Attachments 111*
Hydraulic 28*, 85
Mechanical 27, 87, 94, 99, 113, 123*
Tools 102
PRINTING Equipment 9, 14, 49, 63, 75*, 78*, 106, 114*
Materials 9, 119
Processing 55, 90*
Projecting 59
Protecting 12*, 14, 17, 21, 27, 33*, 40*, 43*, 47, 50, 51, 70, 72*, 92, 96, 119, 125*
Pulling.....2, 4, 12, 35, 63, 83, 123*
Pulverizing 90*, 111
PUMPS, Centrifugal 17, 28*, 68, 70, 75, 90*, 95, 97*, 100, 112
Condensate 61
Hand 40, 62, 97
Hydraulic 39, 40, 62
Jacketed 109
Pneumatic 52, 90
Reciprocating 47*
Rotary 18, 32*, 33, 48, 58*, 91, 92*, 126
Vacuum 20
Punching 102, 117*
Pyrometers.....7, 40, 70*, 97*, 110

RACKS 15, 69, 117
Ramps 79*, 114
Reaming 11, 72
Record Keeping 19, 99, 110
Recorders, Process 93*
Recording Pens 48
RECTIFYING 31*, 35
Reducers, Speed 9, 19*, 20, 40, 67, 68, 92*, 93, 94, 115
Reeling 54
Refractories 69
Refrigerating 16*, 32, 44*, 69*
REGISTER, MANUFACTURERS' .50*
Relays.....10, 18*, 92*, 100, 114*
Research 36*
Resistors 45, 92*
Respirators 27
Restorers, Thread 125
Retrieving 47*
RHEOSTATS 45, 66*
Rings, Piston 16
Rivets 53, 89, 92*
Rock Drilling 18, 74*, 103
Rolls, Machine 46*
Roofs 6, 81*, 83, 91*, 92
Rubber Products.....15, 38, 51*, 125*

SANDING 17*, 29, 66
SAWING Attachments 76, 122*
Blades 28*, 42, 49*
Machine Parts 114
Machines.....21, 50, 107, 109, 117
Tools.....20*, 36*, 62*

Scaffolds...22, 24, 35, 58*, 73, 81, 98*
Scales 8, 102*, 105
Scraping 100
Screening 53*, 99
Screw Driving 44, 64*, 66, 69, 72, 103
Screws.....13, 34, 44, 50, 53, 113, 115
SEALING Components..3*, 10*, 36, 49, 5 , 66, 69*, 71*, 92, 95*
Equipment 34*, 52, 72
Materials 8, 12, 21*, 24, 40, 48, 73, 80, 106, 107, 126*
Separating 5, 49, 92*, 127, 128
Shafts, Flexing 22*
Shaping 31
Shearing .....10, 12, 22, 2 , 32, 35*, 65, 77, 92*, 97, 100
Sheaves 20, 28, 89
SHELVING 42
Shovels, Power 77*
Signaling .....5, 54*, 91*, 9 *, 96, 102, 108, 119*
Signs 8, 15
Silicones.....14*, 28*, 30, 31*
Skids.....10, 14, 16, 76, 89, 95
Sleeves, Slotted 32
SLIP PROOFING 40
Slitting 10, 32, 100
Smoke Stacks 76*
Snow Plows 92
Soldering 18, 26, 32 37*, 38*, 39*, 61*, 75, 122
Solenoids 5
Solvents, Rust 10
Spirals, Conveyor 57
SPRAYING 5*, 21*, 21 22, 23, 30, 51, 52
Sprockets ...3, 28, 80*, 94*, 112, 125*
Stampings 25, 52, 101
Stapling 39, 85, 93, 101*, 104
Starters, Fluorescent 27
Static Eliminating 46*, 120*
STEELS 19, 30*, 104
Stopwatches 104
Storing...3, 4, 15, 16, 19, 41, 42, 61*, 69, 81, 82, 101*, 116, 117, 120
Strainers 29
Strapping 49, 58, 77, 101, 121
Stripping 106
Stud Driving 17*, 84*, 113
Surplus 4
Sweeping....20*, 60, 68, 81, 87*, 128
Switches 13, 17, 26, 40*, 43*, 55, 60*, 64, 65*, 75*, 91*, 91, 94*, 99*, 103*, 105, 126

TABLES 116*
Tachometers 19*
Tackers 39, 104
Tanks 16, 101*
Tapes..11, 24, 38, 58, 65*, 72, 83, 94
Tapping 29, 34, 84
Telephones 38*, 46, 54, 110*
Television, Industrial 54*, 119*
TESTING, Electric 21, 30*, 42*, 42, 88, 98, 108*
Electronic.....5, 30*, 66, 94*, 123*
Hardness 78
Laboratory 96
Performance..38*, 89, 101, 115
Petroleum 46
Solder 67*
Spring 97
Stiffness 78
Temperature 108
Tension 94*, 105
Torque 87
Wear Resistance 78
Thermistors 46
Thermometers 51*, 53*, 75, 106
Thermostats 15*, 38, 59, 74
THREADING Data 30*
Heads 34
Machines 29, 64, 74
Tools 56, 84, 125
Timing 14*, 26, 30, 55, 64*, 91, 104, 105, 116, 121, 124
Tires 29*, 86, 112
Torches 36, 43, 65, 91
Track 21, 94*
Tractors 94*, 99*
TRAILERS.....52*, 68*, 72*, 73*
Tramrail 37, 118*
Transfers, Decal 101, 104*
Transformers 8*, 74*, 114*
Traps 4, 90, 95, 110
Trolleys, Conveyor 14, 24
TRUCKS, Attachments 80, 112*, 117*, 125*
Hand 10, 16, 18, 35, 73*, 92, 107*, 108*, 126*
Hand Lift 88
Power 72*, 124*
Power Lift 13, 23, 31, 60, 72, 91, 94*, 96*, 98, 100*, 100, 112
Tractor 94*, 99*
Trailer 52*, 68*, 72*, 73*
Tube Making 105*
TUBES 6, 30*, 63, 96*
Fittings 96*
Flexible 78, 87
Tumbling 30, 59, 100*, 108*
Turnbuckles 106

UNDERCARRIAGES 70*
Unions, Pipe 32

VALVES, Blow 82
Jacketed 109
Line 4, 6, 14*, 24, 36, 41, 57*
Operating....21, 66, 67, 68*, 85*, 85, 98*, 99, 106, 111, 120
Power Operated 55*, 73*, 91, 113*, 127
Radiator 57, 90
Regulating ...41*, 53, 73, 103, 118
Relief 61*
Repair Parts 12
Ventilating 23, 32, 56*, 57*, 59, 67, 70, 78, 84, 96*, 104, 108, 118, 126, 128
Vibrating 61
Vises 26, 84, 90

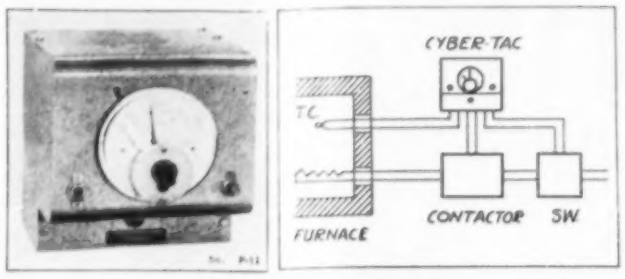
WASHERS 25, 53, 56, 96*
Washroom Equipment....13*, 20, 68
Water Proofing 43*, 123
Water Treating 76
Weighing 8, 57, 96*, 102*, 105
WELDING, Arc 41*, 43, 44*, 68*, 76*, 94
Controls 81
Flame 91
Fume Collectors 9
Materials 43, 53*, 95
Positioners 97
Resistance 20, 32, 100
Wheels.....25, 31*, 76, 88, 96*, 112
Winches 4, 12, 71, 102*
Winding 32, 100
WIRE Cloth 99
Magnet 3
Parts 52, 105
WIRE ROPE Fittings 106
Slings 96*
Wood Working 20*, 36*, 42, 117
Wrenches.....11*, 37*, 41, 64, 72

Address:
INDUSTRIAL EQUIPMENT NEWS
Thomas Publishing Company
A. J. GRANICK, Reader Service Manager
461 Eighth Avenue, New York 1, N. Y.

If you write maker identify as **IEN - 9537**

CONTROL . . Electronic instrument governs current to heating elements

Source: CYBERTRONIC CORPORATION
134-38 Eighth St., Upland, Chester, Pa.



Good for millions of control cycles

Cyber-Tac Model 505 is a new electronic instrument combined with a pyrometer and power relay to actuate a contactor, the latter mounted in the input circuit to an assembly of electric heating elements. The instrument is available for "on-off" duty or "holding". In the latter case, temperature is held at a predetermined point after it has been brought up to that point.

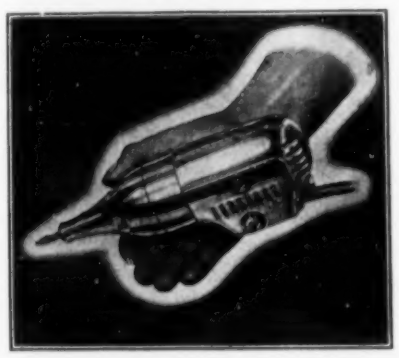
A thermocouple governs position of a contact pointer in the pyrometer. This pointer travels over a calibrated dial until it makes contact with a hand-set pointer at the desired temperature. The resulting closed circuit through the two nonmetallic pointers carries about 0.5 microampere which changes the grid input of an amplifier in the electronic circuit. Output from the amplifier actuates the power relay to operate the contactor.

Operation is on 110 or 220-volt ac. Overall instrument dimensions are 7½ by 5½ by 6 inches. Accuracy is within 2 per cent of full scale range.

If you write maker identify as **IEN - 9538**

GRINDING . . Motor driven tool for free hand use or machine mounting

Source: PRECISE PRODUCTS CORP.
1326 Clark St., Racine, Wis.



Mounts a collet chuck

Super 30 is a new unit in the company's line of high speed portable grinders, previously described IEN-2274-52. It can be equipped with speed control for a range between 15,000 and 45,000 rpm. Drive is by a 1/5-hp. universal motor. The tool has sufficient speed, power and precision to operate midget carbide milling cutters as well as other rotary tools for grinding, finishing, polishing.

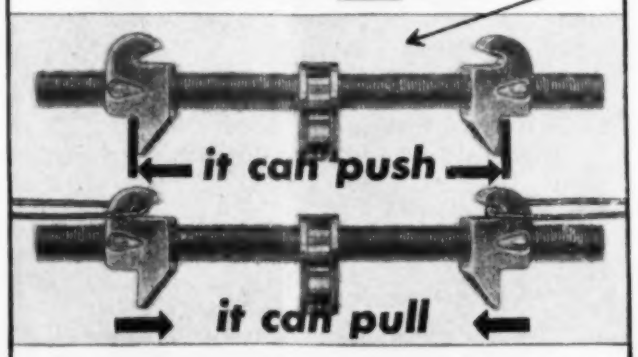
The spindle rides in two ball bearings with lubricant sealed in. The motor is protected against overload by a built-in Fusetron and two automatic brush stops which open the operating circuit when the brushes require replacement.

The housing is made of aluminum with chromium finish. Weight is 35 ounces. Diameter at the chuck nose is ½ inch. Arbor sizes include ⅛, 3/16 and ¼ inch. Mounting surfaces are machined. Special mounts and other accessories are available.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9539**

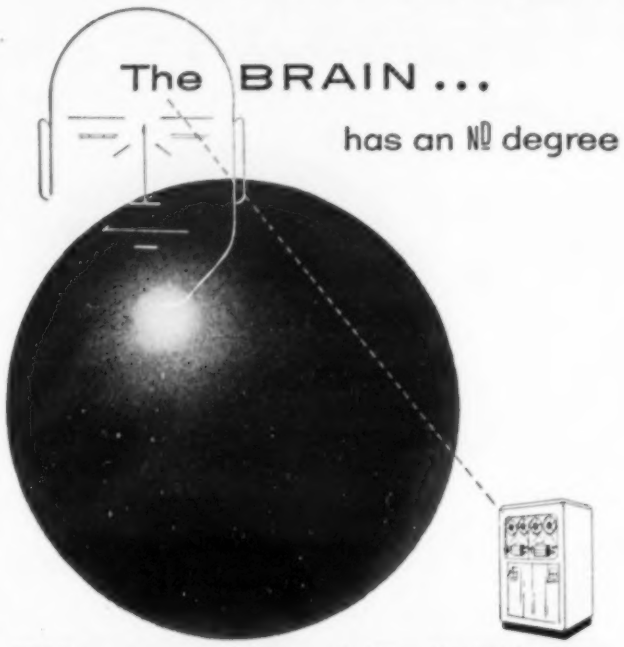
This handy tool can pay for itself on one job!



It's a combination screw jack with ratchet lever socket. An ideal tool for pulling together or pushing apart steel plates, beams, pipe, tightening conveyors, straightening equipment. Precision made in 3 models—10 and 15-ton capacities; weighs 46, 50, and 97 lbs.; in length 24, 28, and 38 inches. For complete information, including prices and delivery, ask your local distributor or write the world's oldest and largest manufacturer of lifting jacks for bulletin AD-9 M, The Duff-Norton Manufacturing Co., P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS
"Giving Industry a Lift Since 1883"

If you write maker identify as **IEN - 9540**



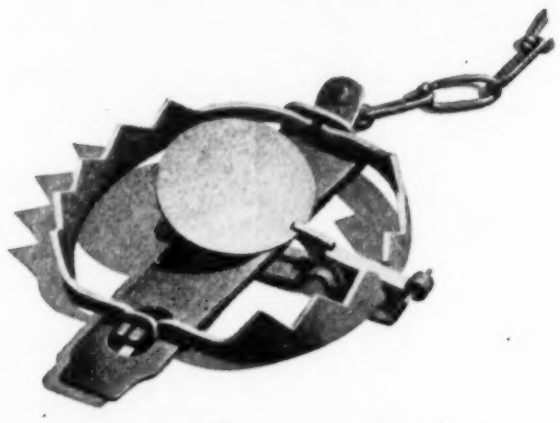
IBM's newest electronic computer averages 14,000 mathematical operations *per second!* Such lightning speed demands accurate support of moving parts. That's why the ball bearings chosen to preserve alignment in the reading and recording devices of the system had to be the best—New Departures!

For instrument bearing information . . . write for free booklet AIB

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

If you write maker identify as **IEN - 9541**



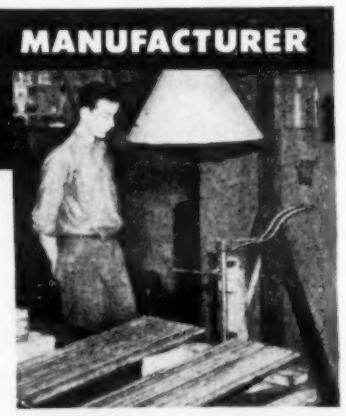
All over your building, fire sets its traps. In dip tanks, transformer vaults, storage spaces. In fact, wherever it can stop your business in its tracks. Make sure you don't fall victim Post a KIDDE Portable Extinguisher next to every fire hazard.

Kidde

Walter Kidde & Company
936 Main Street
Belleville 9, N. J.

If you write maker identify as **IEN - 9542**

DIESEL ENGINE MANUFACTURER CUTS COSTS WITH EASY-FLO



FASTER BRAZING shaves production time on 5 parts of the Lima-Hamilton Corp. 9 x 12 locomotive engine. Here are the jobs as quoted from their report.

PART AND JOB	TIME CYCLE	TEST RESULTS
Exhaust rocker arm to shaft, induction brazed with a ring of 3/32" EASY-FLO wire preplaced.	318 secs. 2 pieces	"On torque loading the 1¼" rocker shaft twists at 12,000 lbs. No failure of joint."
Intake rocker arm to shaft, done same as above.	282 secs. 2 pieces	Same result as above.
Tappet plugs to tappet body, induction brazed with a ring of 3/32" EASY-FLO wire preplaced.	72 secs. each	"Parent metal fails before brazed joint when attempting to press plug from tappet body."
Ball ends to seamless steel tubing push rods, induction brazed with a ring of EASY-FLO No. 3 1/16" wire preplaced. (Illustrated above)	45 secs.	"Tube bulges before joint failure when attempting to push rod ends out of tubing."
Cup ends to seamless steel tubing push rods done same as above.	50 secs.	Same result as above.

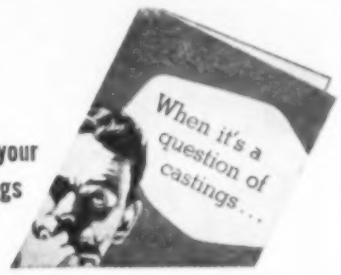
BULLETIN 20 gives you the how and why you get stronger joints in faster time at lower cost with EASY-FLO low-temperature silver alloy brazing. Write for your copy today.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 9543

Just Out!

Useful Information for choosing your corrosion-resisting castings



A new six-page folder ("When It's a Question of Castings") on corrosion-resisting Inco sand and centrifugal castings is just out.

It describes the many destructive conditions which have been overcome by castings of Monel, nickel, and Inconel — conditions of extreme corrosion, erosion, wear.

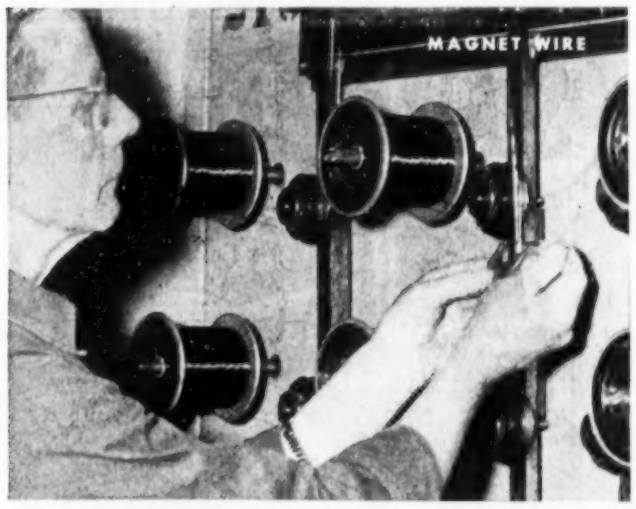
It tells how special techniques at the Inco Foundry insure sound castings of uniform quality — how they are made to meet Government specifications.

It gives you a brief, factual description of how Inco's Foundry has solved design problems with casting alloys since 1906. Chances are it will give you a good idea on whether or not an Inco Casting can solve your problem.

Use the I.E.N. reply card to order your free copy now.

THE INTERNATIONAL NICKEL COMPANY, INC.
75 Wall Street New York 5, N.Y.

If you write maker identify as IEN - 9544



Magnet Wire — plus 30

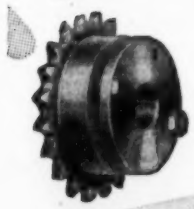
Anaconda's quality-control program is the industry's toughest. At regular intervals, inspectors check this wire in every manner that has a bearing on its quality—30 by actual count, each permanently recorded.

As a result, original equipment manufacturers often think of ANACONDA Magnet Wire as custom-built. They are right. And that's why so many customers have eliminated incoming inspection of ANACONDA Wire. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

ANACONDA® —TODAY'S HEADQUARTERS FOR MAGNET WIRE
Class A: ENAMEL • FORMVAR • NYFORM • NYLON
Class B: VITROTEX* Class H: SILOTEX* *Reg. U. S. Pat. Off.

If you write maker identify as IEN - 9545

Browning SPROCKETS



OFF-THE-SHELF READY-FOR-USE

A Time and Money Saver with

Split Taper Compression Bushings
• NO REBORING
• NO WELDING

Write for Catalog CD 101.
There's a Browning Distributor near you.

BROWNING MANUFACTURING COMPANY MAYSVILLE · · · KENTUCKY

If you write maker identify as IEN - 9546

SEALING .. Conductive gasket, an electronic shield and static drain

Source: VULCANIZED RUBBER PLASTICS CO.
2 E. 29th St., New York 16, N. Y.

DuPont neoprene

Aluminum wire screen is filled with neoprene and buffed on its two surfaces for uniform gage, smoothness and to expose the aluminum wire for electrical contact to make up this new conductive gasketing material. It is designed primarily to mount electrical equipment in motor vehicles and aircraft and for general use in electronic equipment. It permits free drain of static charges through the gasket to eliminate a common cause for interference.

The material holds its dimensions, resists deterioration, provides lasting resilience and is not subject to attack by oil, heat or ozone. It is supplied in the form of cut gaskets in specified shapes and sizes or as uncut sheets measuring 19 in. in length by 15 in. in width. Standard thickness, at present, is 0.02 inch. Other thicknesses are on quantity order.

If you write maker identify as IEN - 9547

LIGHTING .. Fluorescent ballast for constant light from aging lamps

Source: ACME ELECTRIC CO.
26 Water St., Cuba, N. Y.

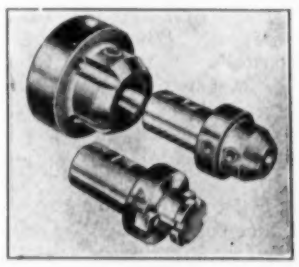
Technical data in Bulletin CCB-193

Type CK-2812-11 is a new ballast for cold cathode fluorescent lamps. It compensates for voltage variation and adjusts automatically, by means of a compensating power increase, so the lamp continues to operate at maximum life output for an extended period of time. The ballast applies with two 93-in. cold cathode lamps with tube pressure of 6 mm. Overall dimensions are about 11¾ by 3⅛ by 2⅝ inches. Weight is about 10 pounds.

If you write maker identify as IEN - 9548

MILLING .. End mill adapter minimizes set up time for milling work

Source: GODDARD & GODDARD CO.
12282 Burt Road, Detroit 23, Mich.



End mill catalog

New adapter mounts directly on the front spindle flange of a No. 50-NS milling machine spindle. It eliminates need for a draw-in bolt and the time required to apply it. Four bolt holes and key slots are provided for the mounting. Two set screws hold straight shank heavy duty end mills and auxiliary equipment. Locating surfaces are finish ground. The adapter takes 2-in. straight shank end mills in addition to special and standard shell end mill arbors for smaller cutters.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9549

SAFETY EQUIPMENT FOR ALL INDUSTRIES

SAFE STORAGE FOR EXCELSIOR AND OTHER INFLAMMABLE MATERIALS

Meet all fire regulations of Insurance Companies, State and Municipal authorities.

IPCO SAFETY STORAGE BINS

For shipping and receiving rooms and other plant areas where excelsior, paper, rags, paint and other combustibles are used. Sturdily manufactured of heavy gauge galvanized iron with reinforced angle corners. Fitted with fusible link so cover is allowed to close automatically in case of fire.

WRITE FOR BULLETIN NO. 63

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
501 N. FOURTH STREET • PHILADELPHIA 33, PA

If you write maker identify as IEN - 9550

LUBRICATION ECONOMY

LUBRIPLATE LUBRICANTS Cut Parts Replacements 50%

The Northern Pacific Transport Company writes us:— *"Since using LUBRIPLATE Lubricants, our overhaul periods are stretched from 50,000 to 100,000 miles, and repair parts bill cut 50%."* LUBRIPLATE Lubricants will show you startling savings in parts and increased production.

1. LUBRIPLATE reduces friction and wear

2. LUBRIPLATE prevents rust and corrosion

3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 9551

If you write maker identify as IEN - 9552

The Metals Handbook

1332 Large pages
1752 Illustrations
1057 Tables
803 Articles
1,620,000 Words
40,000 Copies in use

Here is a book without a competitor . . . a book 25 years in the making. The current, 7th edition of the Metals Handbook was compiled and written by 68 committees of the American Society for Metals; more than 500 metals engineers were hand picked by the Society as the top experts, the men best qualified to write the most authoritative possible reference book on metals, metal properties, fabrication and uses. The book they wrote is the Metals Handbook. It is divided into 37 principal sections, and contains 803 separate articles and data sheets on metals, metal shaping, forming, heat treating, welding, machining, foundry work, cleaning, finishing, testing, inspection, control and research techniques. All metals, all processes are included. The 64-page index and 4-page section on how to use the book make it easy for any reader to find what he wants. Over 40,000 copies of this edition are now in use by engineers, production men, executives, purchasing agents and others. Order your copy today by returning the coupon below. Price is $15.00.

American Society for Metals, Room 702
7339 Euclid Ave., Cleveland 3, Ohio

Rush me a copy of the Metals Handbook.

Name .....
Company .....
Address .....
City ..... Zone ..... State .....
☐ $15.00 enclosed. ☐ Bill me.

If you write maker identify as **IEN-9553**

What do you know about the *Moly-sulfide* LUBRICANT?

A LITTLE DOES A LOT

You may have heard about a highly successful solid-film lubricant which is giving remarkable results in the shop and in the field.

In one 40-page booklet we have collected 154 detailed case-histories describing how difficult lubrication problems have been overcome by molybdenum sulfide. If you wish to be up to date about this solid-film lubricant, write for a free copy now.

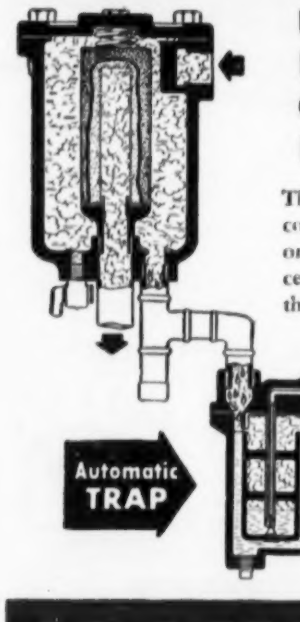
THE LUBRICANT OF MANY USES

Moly-sulfide
A LITTLE DOES A LOT
SEND FOR THIS FREE BOOKLET TODAY

Climax Molybdenum Company
500 Fifth Avenue · New York City 36 · N.Y.

If you write maker identify as **IEN-9554**

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* **AIR FILTER**

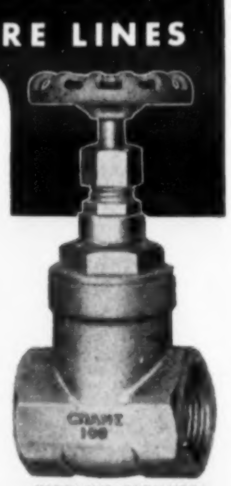
If you write maker identify as **IEN-9555**

Star Performers
ON LOW PRESSURE LINES

CRANE WEDGE DISC BRASS GATE VALVES

Want a better working, better looking brass gate valve for saturated steam, hot and cold water lines, heating systems and similar low pressure service? You'll find it in this modernized Crane design with non-rising stem and guided wedge disc. Note in particular the cylindrical shape of the upper part of the body. Here is maximum strength without bulk—solid reinforcement against line and operating strains.

There's extra strength at the wide-faced hex ends, too, and the accurately cut threads pull up smoothly and evenly. Also available with solder-joint ends. Send for folder AD-1725.



WORKING PRESSURES
100 pounds saturated steam
150 pounds water, 200° F.
150 pounds oil or gas, 150° F.
Screwed ends
Sizes ¼ to 2 in.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

CRANE *Everything for Every Piping System*

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

Industrial Equipment News

PUBLISHED BY THOMAS PUBLISHING COMPANY

W. E. Irish F. Morse Smith

W. E. IRISH
Editor and Vice-President
J. W. MOSS
Managing Editor
A. J. GRANICK
Circulation Manager

F. MORSE SMITH
Vice-President in Charge
E. M. RYAN
Assistant
R. B. COHEN
Production Manager

EDITORIAL ASSISTANTS
M. L. Welsh; A. J. Willis

CIRCULATION AND READER SERVICE ASSISTANTS
C. J. Crawley; R. Lisak

BUSINESS DEPARTMENT ASSISTANTS
M. Casey; R. Irish; J. Penty; B. Sullivan

These are our local offices:

		Telephone
Atlanta (6)	3 Villa Dr. N. E.	VErnon 2969
Boston (8)	50 Beacon Street	LAfayette 3-4688
Chicago (4)	20 West Jackson Blvd.	HArrison 7-3730
Cleveland (14)	3145 Superior Avenue	CHerry 1-2221
Detroit (36)	115 Handy Road (G. P.)	TUxedo 1-1161
Indianapolis (20)	5909 N. Guilford Avenue	BRoadway 4422
Los Angeles (57)	2700 W. 3rd Street	DUnkirk 2-4889
Minneapolis (1)	P. O. Box 455	ORchard 5-8451
New York (1)	461 Eighth Avenue	OXford 5-0500
Philadelphia	P. O. Box 96, Upper Darby	GRanite 2-6500
Pittsburgh (22)	1020 Farmers Bank Bldg.	EXpress 1-0244
Toronto (1)	137 Wellington St., W.	EMpire 4-1421

THIS ISSUE 69,000 COPIES

Printed by Charles Francis Press, New York

Industrial Equipment News acts solely in a news reporting capacity for data supplied to it on new industrial developments.

Copyright 1953 by
THOMAS PUBLISHING COMPANY
461 Eighth Ave., New York 1, N. Y.

CCA NBP

VOL. 21 SEPTEMBER, 1953 No. 9

Compendium

We use this column, once or twice a year, to review the setup of IEN's product information service and to acquaint our new readers particularly with the procedures we have adopted to maintain the service in your best interests. We have been looking about for a title that fits the subject. We found one in a Printers' Ink advertisement. It was just one word, "compendium".

Printers' Ink set down Webster's definition as follows: "Compendium . . . designates a work which gathers together and presents most briefly all the details essential to a comprehensive knowledge of a subject . . ." There you have a pretty good one word definition of IEN's major aim.

The editorial content is divided into five major sections. These are the new product descriptions, the reviews of new literature, the reviews of published material that go beyond straight presentation of product data into services we like to call "useful information", the little "idea" items aimed to make helpful suggestions on most any industrial subject, and finally the column in which we published those of your questions for which we have no direct answer.

Each new product is verified for newness or major improvement within the three or four months preceding our receipt of the news release. It is checked to make certain that it is in production and available to you from the maker or the selling organization named. Every effort is made to collect and present the essential facts so your inquiries can be based constructively upon them.

The new literature items are as carefully selected as the new products, IEN's measure basing on potential value of the subject matter for your reference and use, and on suitable physical size to hold in your files. Each new literature review is written from an actual copy so its contents can be studied and reported factually.

Certain pieces of the new literature, that meet IEN's definition of useful information, are reviewed in a special department. The purpose is to bring particularly to your attention the printed assistance available to you from manufacturers and service organizations that are looking beyond the immediate business of making a sale. You can build a library of practical data on many subjects by collecting and assembling this material.

Every day our mail brings us ideas of new ways to do things, suggestions to improve procedure, little pieces on a hundred and one subjects not necessarily concerned with new products or new literature. The best of these are sorted out, presented in the center spread and also distributed here and there through the pages. They are IEN's "ideas for you".

The editorial columns are open to any of you who are supplying products or services for the industrial field. We invite your news releases and samples of your new literature for review. There is no obligation on your part. We also invite your questions on any subject that concerns management, purchasing, product design, production and plant operation. If we cannot give you a direct answer we will print the question to bring all of IEN's 62,000 readers into the "I Wish I Had" column which, with the page-one subject index, completes IEN's monthly editorial compendium.

W. E. Irish.

If you write maker identify as **IEN-9556**

20 "SEE THRU" DRAWERS!

60 LENGTHWISE OR CROSSWISE compartments

LOWEST COST
HANDIEST STORAGE
Useful in every shop, lab, home office, etc. In radio, TV or ignition work. KEEPS SMALL THINGS HANDY.

$7.95 Model J-

No other cabinet can compare in price, construction strength! Many desirable features! "SEE-THRU" durable Plastic Drawers can't spill accidentally. Strong welded steel cabinets. Drawers divide into 2 or 3 compartments. LENGTHWISE, or CROSSWISE. Sent complete with index cards, drawer dividers, rubber feet.

10 DAY FREE TRIAL! Return after 10 days if not completely satisfied.

HAZ-BIN JR. DRAWER SIZE SAME IN ALL MODELS
2⅜"W x 1 7/16"D x 5⅞"L.

Mfg. by Akro-Mils, Inc
P. O. Box 989N,
Akron 9, Ohio

All models 6" deep. J-8 thru J-48 12½" Wide, J-64 thru J-128, 25⅛ Wide.

HAZ-BIN, JR. STORAGE UNITS

Model No.	No. of Drawers.	Height.	Lbs. Wt.	Net Price.
J-128	128	30½"	50	$55.95
J- 96	96	22½"	40	42.95
J- 64	64	15¼"	25	24.95
J- 48	48	22½"	19	20.95
J- 32	32	15¼"	13	12.95
J- 24	24	12¼"	10	9.95
J- 20	20	10¼"	9	7.95
J- 16	16	8¼"	8	6.95

SEND NO MONEY • CATALOG FREE ON REQUEST.

If you write maker identify as **IEN-9557**

S-A Car Pullers

Save Time
Cut Costs

If you have your own switch track, you can profitably use an S-A Car Puller. No need to use a gang of men or wait for a switch engine. *One man can shift or spot up to six loaded cars under normal conditions.* Powerful capstan will also pull or lift other heavy loads at 45 feet per minute. *Mail coupon for Bulletin 1339.*

MAIL COUPON FOR FULL DATA

STEPHENS-ADAMSON MFG. CO.
Standard Products Division
231 RIDGEWAY AVE., AURORA, ILL.
Please send me Bulletin 1339 on S-A Car Pullers.
Name..........
Company..........
Address..........
City.......... Zone.... State..........

If you write maker identify as **IEN-9558**

SAVE UP TO 85%

WAR SURPLUS SAVINGS

NEW INSIDE – OUTSIDE VERNIER CALIPERS
German made by one of Europe's leading specialists in precision tools. Measures inside-outside & depth in .001" to 6" in 1000ths and 1/10mm to 150mm in 10ths. 9.75
MICROMETERS – 0" to 1" in 1,000ths. 9.75
Has lock-nut & ratchet ...ONLY – ... 9.75

STAND MAGNIFIER
Handy stand magnifier with universal adjustments. Overall height: 6". Has powerful, clear magnifying lens. 1.49

BENDIX HYDRAULIC PUMP & MOTOR
Has 3-1/2 GPM capacity at 600 PSI. Motor is 1½ HP, 24V, D.C. Will operate on either 12 or 32V, DC current. Has built-in relief valve adj. to 1500 PSI. This unit ideal for hyd. lifts, portable loaders, etc. 19.50

MAGNETIC BASE—INDICATOR HOLDER...
A time saver for precision checking. Magnetic base fits curved or flat surface. Has 45-50 lb. pull. Stainless steel 6½" rod mounted in ball socket permits universal settings.. 3.95
Note: We have complete line of instruments, depth gauges, inspection mirrors, etc. WRITE TODAY

HYDRAULIC HAND PUMP
Operating pressure 2000 PSI. Cap., 1.5 cu. in per complete cycle ... 12.75

GEAR HEAD MOTORS
Heavy duty, G.E. Gear Head motor. 2 HP, 24V. DC, 125 amp., reversible motor drives a reduction gear unit giving 36 to 1 ratio at take-off. Also will operate on 6 or 12 volts.
36 to 1 G.E. (306 shaft RPM)
28 to 1 Eclipse (130 shaft RPM)
40 to 1 Eclipse (110 shaft RPM) 10.95 EA.

HYDRAULIC ACCUMULATORS
A-28 FLOATING PISTON TYPE – 4"x 18"
Built to stand 2,000 PSI 12.75
A-5 VICKERS – 10" dia. Ball type. Built to stand 2000 P.S.I. 24.75

ELECTRIC ACTUATORS
Hundreds of uses for any mechanical device needing controlled 2 way action. Opens, closes, raises or lowers doors – windows – gates – valves. CTU-2 – Foote Linear Actuator – 24 volt, DC, 8500 RPM, 1/6 HP – series wound motor. 4½" stroke in 13½ sec. Compression and tension loads up to 750 lbs. Adjustable micro switch for limits of travel. Overall lngth., retracted 11" 7.95
We also carry many more sizes and types of Actuators.- Write today for information.

HYDRAULIC CYLINDERS
Gives 20,000 lb. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore; 18" stroke; 30½" length. Ideal for road form – shop machinery. 29.95

No. 3 HYDRAULIC CYLINDER
Double action. Bore is 1" – Shaft ⅜". Has stroke of 2½" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1500 lbs. continuous duty. 3000 lbs. intermittent. Will lift or push up to 1100 lbs. 5.75
We stock over 50,000 Hydraulic Cylinders, Valves, Pumps, Accumulators, Hand Pumps, Motors, Hose, etc. All at Money Saving Prices.

230 PG. CATALOG
Amazing Values! 1000's of items for Mfgr., Mechanic, Sportsman, etc. Save on Machine Tools, Hydraulics, Pumps, Valves, Hand & Power Tools, Instruments, etc. Send for your copy today!

PALLEY SUPPLY CO.
2263 E. VERNON AVE. IN-9
LOS ANGELES 58, CALIF.

Order from this ad. Pay by M.O. or check. P.O's accptd from D&B firms. ½ deposit with C.O.D's.
All Prices F.O.B. Los Angeles

If you write maker identify as IEN - 9559

. . . increase production, lower operating costs!

with finger tip control

LOVEJOY

variable SPEED PULLEYS

A mere turn of the hand is all that is required for instant speed correction on your machinery. Changes in production schedules, operator speed adjustment or specification variations are accomplished without loss of time or labor. Benefits of LOVEJOY finger-tip-control pulleys are reflected in an *improved* product—manufactured at a *lower* cost. Sizes from fractions to 8 hp. Ratios to 3 to 1.

Get full information on this complete line of economical variable-speed pulleys. Write today for fully illustrated catalog and engineering manual.

LOVEJOY FLEXIBLE COUPLING CO.

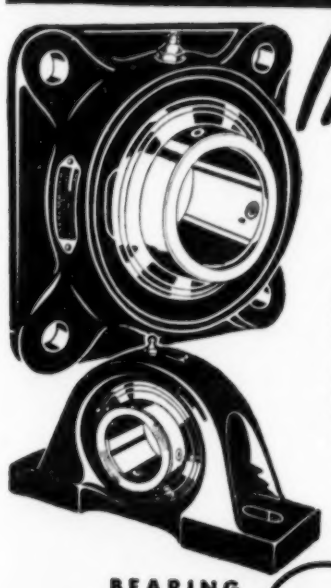
5014 W. Lake Street • Chicago 44, Illinois

Also Mfrs. Lovejoy Universal Joints and Lovejoy Flexible Couplings

If you write maker identify as IEN - 9560

• Flange Units
• Pillow Blocks
• Take-Up Units

SEALMASTER BALL BEARING UNITS



Improve Any Bearing Application

Replace worn bearings with SealMasters. They give lasting service and economy. Only SealMaster bearings combine the features essential to smooth operation, long life, easy installation and top performance in quiet power transmission.

Write for Catalog 845

BEARING DIVISION

STEPHENS-ADAMSON MFG. CO.

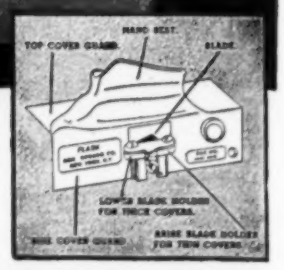
Tèllevel—Bin Level Controls · Car Loaders · SealMaster Ball Bearings · Car Pullers · Winches · Saco Speed Reducers

RIDGEWAY AVE., AURORA, ILLINOIS

If you write maker identify as IEN - 9561

Amazing FLASH BOX OPENER

Opens Any Carton Quicker . . . Cleaner



Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

Retail Price $1.75

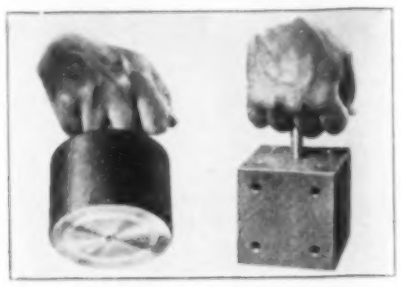
FLASH BOX OPENER CO., Inc.

52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 9562

CLAMP . . Permanent magnet units in two types for work positioning

Source: ARONSON MACHINE CO.
453 Aronson St., Arcade, N. Y.



Powerful grip

Two new units, one round and one rectangular, have been added to the permanent-magnet line, previously described IEN-6081-53. Model MCR, the round unit, measures 4 in. in diameter. It exerts a 275-lb. pull with an 0.005-in. air gap. Model MCQ measures 3¾ in. on each side and has a 375-lb. pull. Both carry threaded holes to attach fixtures and structures employed in work positioning. List price is $70 and $75 per pair.

If you write maker identify as IEN - 9563

CLAMP . . Cushioned stainless steel to hold hot tube and pipe in place

Source: THOMAS ASSOCIATES
4605-9 Alger St., Los Angeles 39, Calif.

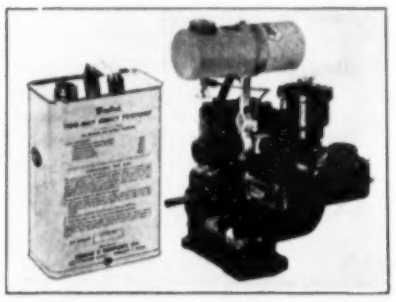
Sample on request

Spun glass is wrapped around a stainless steel body in manufacture of this new clamp. The unit is dipped in an aluminum and silicate base paint that serves as a binder. The finished clamp secures tube and pipe in place, where temperatures run as high as 1,200 deg. F., without loss in cushioning ability. Sizes range from ⅛ to 6 in. in diameter in $\frac{1}{16}$-in. increments. Designation is Series TA1716 and 1774.

If you write maker identify as IEN - 9564

SPRAYING . . Atomizing equipment and insecticide for surface treatment

Source: BRULIN & COMPANY
Columbia at 30th St., Dept. 195, Indianapolis 7, Ind.



Beats hand spraying

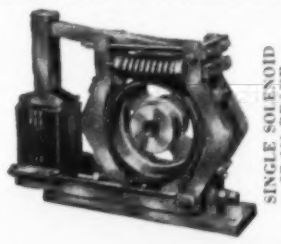
New equipment has been developed to surface spray the company's Insect-O-Fog insecticide to exterminate mosquitos, flies and similar insects. It mounts on a skid or wheel base and is driven by a 1-hp. Briggs & Stratton gasoline engine. Assembly weight is 30 pounds. One quart of the liquid will treat about 200 sq. ft. of surface.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

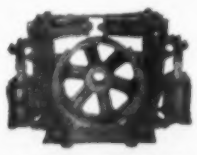
If you write maker identify as IEN - 9565

TROMBETTA SOLENOID CORP.

331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.



SINGLE SOLENOID SB-373 BRAKE 10" DIA. 5" FACE 475 FT.-LBS. CONTINUOUS DUTY



DOUBLE SOLENOID SB-388 BRAKE 24" DIA. 10" FACE 2400 FT.-LBS. CONTINUOUS DUTY

SB-300 LINE OF BRAKES

Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES

(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

See McGraw Hill's Prefiled Electrical Catalogs. Write for Additional Information.

If you write maker identify as IEN - 9566

INCREASE HEATING EFFICIENCY

LOWER HEATING COSTS

with CHROMALOX Electric HEATERS

EASY TO INSTALL • ECONOMICAL TO USE

Want the quick, low cost answer to almost any heating problem in your plant? Get it with Chromalox Electric Heaters! Over 15,000 types and sizes for heating dies, molds, platens; for preheating oil and superheating steam; for heating asphalt, greases, oils; for drying, curing, baking, dehydrating and other heating jobs. See how Chromalox Electric Heat can help cut your costs!

THIS CATALOG may be worth money to you

Write today for your copy.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox advertisement on Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 9567

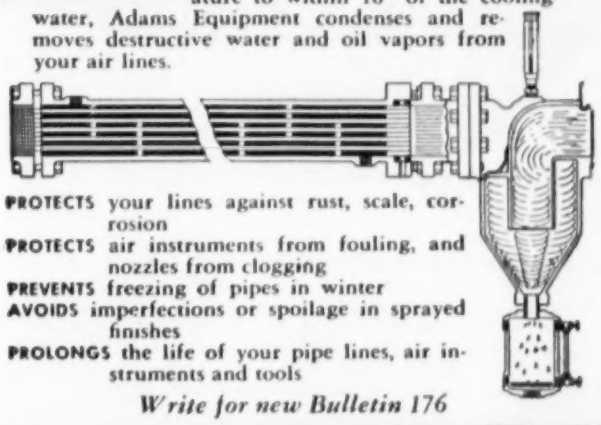
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 9568

THE Surest WAY TO FIND HIDDEN STRAY METAL

ALLIS-CHALMERS *Electronic* Metal Detectors

NEW USERS of Allis-Chalmers electronic Metal Detectors are usually surprised at the large number of pieces of stray metal detected in their packages. A typical comment is "It's a wonder we have any customers left."

Fortunately not all stray metal causes injury. And in most cases the customer never writes in about it. But your reputation suffers! Precautions lessen the problem, but the surest way to catch hidden stray metal — magnetic or non-magnetic—is with an Allis-Chalmers electronic Metal Detector. Metal particles .047 inch diameter and larger are detected.

Call your nearby Allis-Chalmers Sales Office for 20 page bulletin 7217, which shows the many ways of applying A-C electronic Metal Detectors. A-3080

Allis-Chalmers
Milwaukee 1, Wis.

ALLIS-CHALMERS

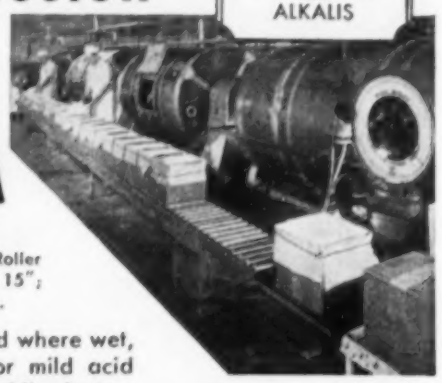
If you write maker identify as IEN - 9569

METZGAR "NYLO-ROLL" CONVEYORS

Resist CORROSION

LACTIC ACID
FOOD ACIDS
MILD INDUSTRIAL ACIDS
BRINE, SALT
ALKALIS

NYLON BEARINGS ON STAINLESS STEEL AXLES



Gravity, or Live Roller Models. 11½"; 15"; 18"; 24" widths.

Recommended where wet, alkali, salt, or mild acid conditions rapidly destroy ordinary ball bearings.

For full information Describe your needs

METZGAR CO.

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

METZGAR CONVEYORS

417 DOUGLAS, N. W.
GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 9570

AMERICAN MONORAIL EQUIPS RIGID FRAME BUILDINGS WITH FLEXIBLE OVERHEAD SERVICE

Don't let crane requirements stymie your consideration of rigid frame buildings. Packaged buildings not only provide definite savings in construction costs and erection time but can be equipped with crane service over the entire area. American MonoRail cranes up to 5-ton capacity are available for entire span or half span operation. If you are planning plant expansion and considering rigid frame type construction, be sure to include American MonoRail cranes. Our engineers will gladly consult with you and show you cost and space saving advantages, in addition to original installation savings. Write us today.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as IEN - 9571

making "cobra coils" out of stainless tubing?

Probably your fabricating problem is not so complex — but whatever it is — here's the "charm" to make it easy. It's the new Carpenter Bending and Coiling slide chart for Stainless Tubing and Pipe. Send for it today.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

If you write maker identify as IEN - 9572

DRYING .. Spray chemical displaces moisture, prevents corrosion

Source: PERFECTING SERVICE CO.
336 Atando Ave., Charlotte 6, N. C.

Application data in Bulletin A-10

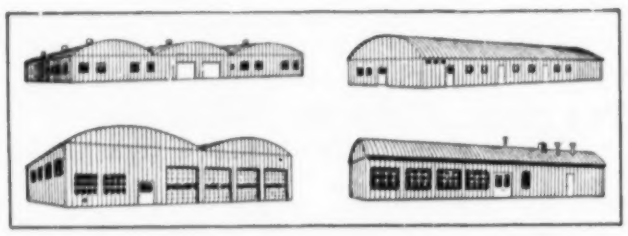
Spradri is a new water displacing chemical. It is combined with a rust inhibitor and a preservative and is packaged in a 12-oz. pressurized container. The chemical is sprayed to penetrate into pores and crevices from where it will drive out moisture and form a dry, hard microscopic water repellent and rust preventive film. It is particularly suited for application on flooded automotive and marine equipment such as sparkplugs, distributors, generators, battery connections. It will dry them out and make them ready for operation in a few minutes.

Flooded electrical equipment, such as motors, control panels, coils, generators, appliances, can be put back into operation in 15 to 20 min. After the spray has been applied. It also will prevent corrosion in tools, instruments and work pieces between processing operations. The material is colorless and need not be removed prior to painting. It will not harm metals, rubber or insulation. List price is $2.95.

If you write maker identify as IEN - 9573

BUILDINGS .. Prefabricated steel, to 70 ft. span, 12 to 20 ft. height

Source: BROOKVILLE MFG. CO.
P. O. Box 67-A, Brookville, Pa.



Ask for illustrated specifications

Clear span dimension of 70 ft. has been added to the company's prefabricated steel buildings previously described IEN-5685-52. At that time the maximum span was 60 ft. and the building was available also in 40 and 48 ft. widths. Wall heights remain the same at 12, 16 and 20 feet. Length is in increments of 16 feet. Multiple buildings can be erected from combinations of single units. Crane runways are available in 5, 7½ and 10-ton capacity.

Various designs of window, employing standard steel sash in solid and ventilating designs, can be specified. Roof ventilation can be added to the structure at the time it is ordered or after it has been erected. Hinged single doors are standard in an 8 ft. section. Double hinged or overhead doors are supplied in any 16-ft. section of the new building.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9574

For Quick, Permanent Roofing

on any type of structure

TRUSCON FERROBORD® STEEL ROOFDECK

This strong, lightweight, steel roofdeck can be applied to any flat, pitched or curved roof structure. Large areas can be covered quickly. The members are so designed and formed that each unit firmly interlocks with the adjoining unit along the full length, achieving the maximum in lateral distribution of concentrated loadings. The members are fabricated in units long enough to span over three or more purlin spacings.

Ferrobord is manufactured from both 20-gage and 18-gage copper-bearing strip steel. Each unit is 6 inches wide and has a depth of either 1½" or 1¾". WRITE FOR FREE BOOKLET!

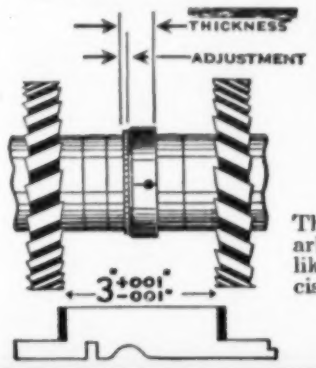
TRUSCON MARK OF MERIT PRODUCTS

TRUSCON® STEEL DIVISION
REPUBLIC STEEL CORPORATION
1094 ALBERT STREET • YOUNGSTOWN 1, OHIO

If you write maker identify as IEN - 9575

SAVE TIME on GANG MILLING SET-UPS

Dayton Rogers *hardened and ground*, adjustable micrometer spacing collars are considered the last word on all types of milling machine set-ups for gang milling, straddle milling and similar operations. They are quickly and easily adjusted to the plus or minus positive adjustment. The collar is so designed that it gives the minimum over-all thickness with the maximum adjustment, graduated in .001".



They are stocked for cutter arbors from ⅝" to 2". You'll like the speed, the precision, and the time saved!

Write Today For More Information!

DAYTON ROGERS *Manufacturing Company*
2836 13th AVE. S.
MINNEAPOLIS, MINNESOTA

If you write maker identify as IEN - 9576

Cut Polishing Time Improve Surface Quality

with "LINDE" FINE ALUMINA POWDERS

Obtain superior finishes, free from microscopic pits and scratches in a fraction of the usual polishing time. Use less abrasive and use it directly without levigation and other wasteful preparatory steps. They can also be compounded with waxes and used in stick form.

LINDE Fine Alumina Powders are characterized by ultra-fine, uniform particle size, high purity, and swift polishing action. They have gained wide-spread acceptance in polishing materials ranging from metallographic specimens to gemstones and noble metals.

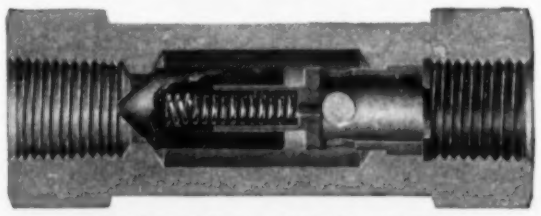
Call or write any LINDE office and we will be glad to discuss your particular polishing applications.

	Type A	Type B
Chemical Composition	Alpha Al_2O_3	Gamma Al_2O_3
Particle Size (approximate)	0.3 Microns	Less than 0.1 Microns
Hardness (Moh's) (Equivalent to crystalline material)	9	8
Crystalline Structure	Hexagonal	Cubic

The term "Linde" is a trade-mark of Union Carbide and Carbon Corporation.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street, New York 17, N. Y. Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

If you write maker identify as IEN - 9577



CHECK VALVES

- **ONE PIECE CONSTRUCTION**
  No welds or brazes to crack or fail — Available in ⅜", ½", ¾", 1" NPT lines sizes
- **NYLON POPPET**
  Assures leak proof trouble-free service
- **LIGHT WEIGHT**
  Aluminum body and nylon poppet reduce overall weight and increase ease of handling during installation
- **LOW PRESSURE DROP**
  Minimum pressure loss thru valve at rated flow

Write for illustrated circular C

WATERMAN ENGINEERING *Company*
725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN - 9578

TAL PORTABLE BENDERS

Complete ALL Piping Jobs FASTER

SAVE ON

- Number of Fittings
- Elbows & Couplings
- Cutting, Threading
- Overall Costs

Install pipe and conduit *faster* at *lower cost* by reducing up to 80% the number of fittings or elbows and couplings otherwise needed. Save on cutting and threading. You can with a Tal, because Tal Portable Benders make any degree bend up to 180° in A *SINGLE* OPERATION WITHOUT SHIFTING THE PIPE.

No guesswork for offsets, long sweeps or any other bends. No experience necessary to make accurate, wrinkle-free bends right on the job. *No spoilage.* Bend indicator assures identical repeat bends without measuring. Learn today how you can earn more money and handle more jobs with a Tal Bender.

COMPLETE LINE OF BENDERS
For pipe up to *8 inch.*
For copper and thinwall tubing.
6-Way Hickeys — lifetime guarantee.

WRITE FOR THIS FREE BULLETIN

Tal Bender, Inc. Dept. 2 Milwaukee 2, Wis.

If you write maker identify as IEN - 9579

Get 19" Lift from 2½" Clearance!

SIMPLEX RATCHET LOWERING JACKS

Lift or Lower Notch-by-Notch—Cannot be Tripped

With Simplex Ratchet Lowering Jacks a minimum of toe clearance is required—and only Simplex Jacks provide equal lift capacity *on toe or cap.* In fast jacking action, all-purpose utility, extra safety features and rugged strength for longer life, Simplex Ratchet Lowering Jacks give you more for your money! Capacities of 1½ to 35 tons. Write today for Bulletin: Industrial 49.

SAFETY SUGGESTION—Use thin wood block—don't lift or lower steel against steel.

Simplex LEVER · SCREW · HYDRAULIC **Jacks**

TEMPLETON, KENLY & CO.
2527 Gardner Road • Broadview, Illinois

If you write maker identify as IEN - 9580

Mark Gears...

CLEARLY AND EFFICIENTLY WITH MODEL GH-2

Press Style GEAR MARKER

Legible—clear-cut marking of any size gear, with any amount of lettering—is possible with this press style type holder. Furnished with any size or style shank to suit your press. Features *Quick Change* steel type.

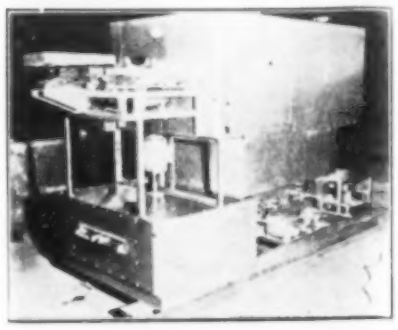
Write for new Catalog 100 today!

Mecco SAFETY MARKING TOOLS M.E.CUNNINGHAM CO.
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 9581

HEAT TREATING .. Packaged furnace applies in a production conveyor line

Source: FERGUSON EQUIPMENT CORP.
Penn Ave. & 21st St., Pittsburgh 22, Pa.



To specification

Work parts, small or large, are fed into this new furnace, from a suitable conveyor, over a shuffle type hearth for heat treating, carburizing, dry cyaniding. They move through the high temperature section where they can be heated to about 1,750 deg. F. They pass from there through a draw section on a shuffle hearth or a mesh belt conveyor. The equipment includes an oil or water quench and washing equipment. The work issues to a second outside conveyor.

The line includes six furnace sizes with work capacity ranging from 75 to 500 lb. per hour. No work handling is required between feed and delivery. As many as four different parts can be run through simultaneously at individual time cycles.

If you write maker identify as IEN - 9582

GLARE PROOFING .. Liquid material sprays on windows to exclude sunlight

Source: EASTERN INDUSTRIAL SERVICE INC.
15-19 Day St., Cambridge 40, Mass.

About $14 per gallon

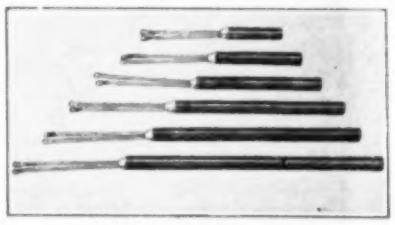
Thermoglare Film is a new liquid plastic for spray application on window glass to exclude glare and ultraviolet rays from the sunlight. The liquid dries to a weather resistant film. It will remain in good condition for three years or more. Coverage is 300 to 350 sq. ft. per gallon.

Also available is a translucent plastic sheet material in blue-green, light gray and frosty white. This material is available in various thicknesses for application on the window surfaces. It lists at about 70 cents per sq. ft. in 0.06 gage.

If you write maker identify as IEN - 9583

HEATING .. Electric element applies in drilled hole in a machine

Source: THERMEL INCORPORATED
3438-42 W. Lake St., Chicago 34, Ill.



Makes accurate fit

Thermacartridge is a new cylindrical electric heating element. It is available in lengths from 1 to 12 in. and from ⅜ to ¾ in. in diameter. Typical applications are in injection molding machines, preplasticizers, heating forms for shell molding. The elements are available to order for a specified use and capacity.

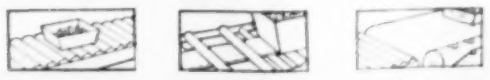
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9584

X-Series

Low-Friction Bearing For Conveyor Rolls

Logan leads again—with the most important bearing development for conveyor rolls in twenty years. Now available at about same price as regular conveyor bearings. Note: 33% less grade required on gravity conveyor lines. Write for folder on X-Series, today.



For Roller Conveyors | For Live Roll Conveyors | For Belt Conveyors

LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 9585

Switch...

and get Precision Data—For temperature, batch weighing, force and other measurements . . . investigate Speedomax® Model D Indicator. It gives you more points than any other *one* instrument. Write for Folder ND46(4), Leeds & Northrup Company, 4905 Stenton Ave., Philadelphia 44, Pa.

If you write maker identify as IEN - 9586

WANT A BETTER CHAIN?

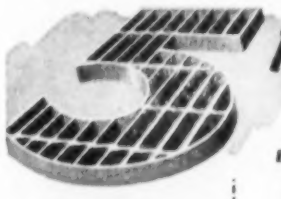
FOR DRIVES
FOR CONVEYORS

This new booklet presents the complete story of the new Rex R, RX and RR series Chabelco® Drive and Conveyor Chains. It explains how these improved chains can give *you* more for your chain dollar. Send for your copy of Bulletin 53-59 today!

REX® CHAIN BELT COMPANY OF MILWAUKEE

CHAIN BELT COMPANY 53-108
4675 W. Greenfield Ave.
Milwaukee 1, Wis.
Gentlemen:
Please send me Bulletin 53-59.
Name.....
Company.....Dept.....
Address.....
City.....State.....

If you write maker identify as IEN - 9587



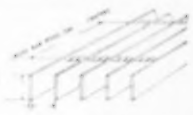
5 REASONS WHY BLAW-KNOX ELECTROFORGED® GRATING IS YOUR BEST BUY

- STRENGTH
- SAFETY
- LOW UPKEEP
- LONG LIFE
- SELF-CLEANING

We factory-fit this one-piece Open Steel Flooring to your dimensions for easy installation. You can cover dangerous open areas and add useful space inside and out.

USE COUPON FOR DETAILS AND PRICES

BLAW-KNOX COMPANY
GRATING DEPARTMENT
BLAW-KNOX EQUIPMENT DIVISION
P.O. Box 1198, Pittsburgh, Pa.



Please send prices on____sq. ft. Grating as per specifications marked at right.
Please send prices on___Type___Stair Treads___inches wide.
COMPANY_____
INDIVIDUAL_____
STREET_____
CITY_____ZONE_____STATE_____

BLAW-KNOX ELECTROFORGED STEEL GRATING

If you write maker identify as IEN - 9588

Close-Up Look Tells Why... THE NEW 12" SWING LOGAN LATHE

DELIVERS PLUS PERFORMANCE

For Production, Maintenance, Tool Room or School Shop

Rigid HEADSTOCK
Massively proportioned spindle for extreme rigidity on heavy cuts. Oversize ball bearing mounting for sustained accuracy.

Massive CARRIAGE
Large dials have widely separated graduations for accurate reading. Precision ground surfaces on cross slide and saddle permit mounting fixtures and use of magnetic indicators. Extra wide and long bearing surface. Convenient, lever-operated, disc type clutch. Heavy compound for rigidity.

The closer you inspect this new 12" swing Logan Lathe, the *better* it looks. The advanced design of individual parts, and the precision construction throughout become more evident. Its 35" center distance, 1⅝" spindle hole, 1" collet capacity, and rugged, massive proportions mean extra capacity, stability and power. Keep this newest Logan in mind as you make plans for your production line, tool room, shop, or student training program.

Brief Specifications
Swing over bed and saddle wings, 12"... Center Distances, 23" and 35"... Turret Lathes Models have 43" bed length ... 1⅝" spindle hole ... 1" collet capacity ... 16 spindle speeds, 38 to 1260 rpm.

Get full facts from your Logan Dealer, or WRITE
LOGAN ENGINEERING CO., Lawrence and Lamon Ave., Chicago 30, Ill.

If you write maker identify as IEN - 9589

Here's the Safest Fuse Protection Money Can Buy

TRICO "Powder-Packed" RENEWABLE FUSES

Guaranteed Safety ... Plus Three Times Ordinary Fuse Service

It's the Custom-Built "powder-packed" renewal element found only in TRICO that eliminates dangerous fire hazards and supplies that important safe time-lag to handle sudden or surge overloads . . . Besides, you get tamper-proof protection and lifetime outer parts.

SEND FOR BOOKLET 206-A

Get the complete TRICO story. Yours for the asking.

Prevent shock . . Burns . . Possible Death . . Pull Fuses Safely With TRICO

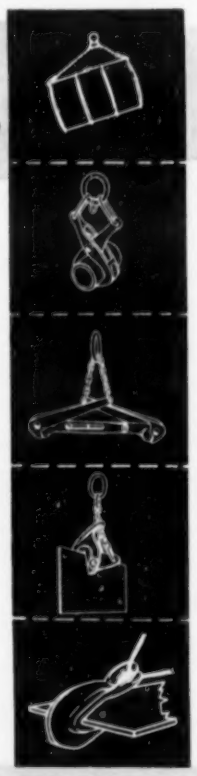
FUSE PULLERS

Their low cost is cheap insurance against unnecessary accidents. Also handy for adjusting switch and fuse clips.
WRITE FOR BULLETIN NO. 5

TRICO FUSE MFG. CO. Milwaukee, Wis.

If you write maker identify as IEN - 9590

PICK 'EM UP *Faster..Easier*



DOWNS SAFETY GRABS ...GRIP ANYTHING!

Yes we said anything—odd shapes, round, oblong, square or even loose objects such as bags or bundles. Best of all you save money on your handling problems while protecting employees.

Downs Safety Grabs are engineered to provide a load safety factor greater than rated capacity plus a Bulldog grip that won't let go until you release the load. There's a Downs hook, grip, tong or sling to fit every handling problem. Write for free illustrated catalog 200 today!

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE • LOS ANGELES 37, CALIF.

If you write maker identify as IEN - 9591

NAMEPLATES . . Die cast design finished in chromium, brass, bronze

Source: STEMAC INCORPORATED
1287 S. Cherokee St., Denver 19, Colo.

Sample plate and data on request

Color can be included, trade marks duplicated, in the company's new line of die cast nameplates. The plate is sufficiently flexible to be mounted on a concave or convex surface by screws, bolts, speed nuts. The company is able to produce without a large tool cost so small as well as quantity runs are practical. The die-cast design supplements the company's etched and engraved plates.

If you write maker identify as IEN - 9592

DRIVE . . Link type V-belt in kit assemblies for emergency use

Source: BRAMMER CORPORATION
684 Broadway, Dept. I, New York 12, N. Y.

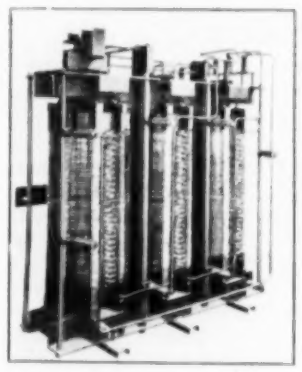
Ask for Zipon kit information

The company announces the availability of four kits of its link type V-belt previously described IEN-1676-53. Each contains a length of detachable V-link belting, an attaching tool and an instruction folder. The four kits cover various sizes of belting and can be employed to replace all fractional horsepower and most multiple V-belts.

If you write maker identify as IEN - 9593

TRANSFORMER . . Dry type design for high voltage unit substations

Source: HEVI DUTY ELECTRIC CO.
4210-14 W. Highland Blvd., Milwaukee 1, Wis.



Bulletin HD-499

A core designed to operate at moderate flux density for quiet action, adequate core and coil blocking, high voltage insulators, ventilated pancake type coils characterize the construction of this new 1,000 kva. 4160-Delta, 480-Delta transformer. The assembly is vacuum pressure impregnated with a polymerizing varnish for protection during peak operating intervals. The unit can be purchased as a core and coil assembly or enclosed in a steel housing. Capacities range to 2,000 kva. and 15,000 volts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9594

Check the Extra Values in WAYNE COMPRESSORS

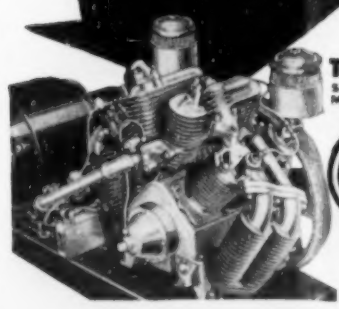
1. GUARANTEED FULL-RATED OUTPUT
2. JOB-ENGINEERED FOR YOUR PLANT
3. EXTRA COOLING CAPACITY
4. LONGER SERVICE PISTONS
5. "WEAR-GUARD" LUBRICATION

FOR LONGER, TROUBLE-FREE SERVICE
LOWER OPERATING COSTS — POSITIVE AIR

Let the extra values in Wayne Air Compressors go to work for you, for extra production in your plant. From first design to finished assembly, every Wayne Compressor is built to give you extra efficiency . . . more value for your compressor dollar.

Wayne engineering features are aimed at providing a better compressor in every way — cooler in operation, with lower power consumption, higher efficiency, lower maintenance costs, and longer, trouble-free life.

When you buy a Wayne Compressor, you buy guaranteed full-rated usable air output . . . all the air you need for all your machines. And every Wayne Compressor is backed by a nation-wide service organization. Make your next compressor Wayne.



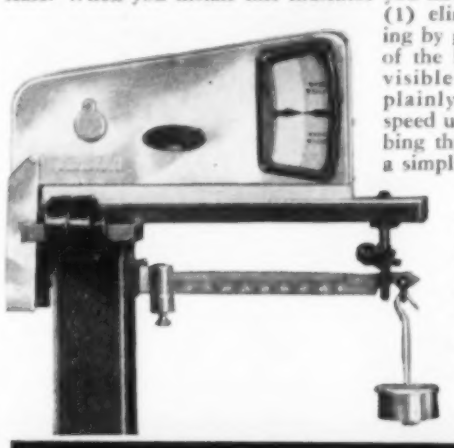
THE WAYNE PUMP CO.
Salisbury, Maryland — Toronto, Canada

Wayne NATION WIDE SERVICE

If you write maker identify as IEN - 9595

Indicators Give You These Three Advantages . . .

An EXACT WEIGHT indicator is not a scale by itself. Rather it is a simple attachment which you can put on your regular platform scale. When you install this indicator you have these advantages: (1) eliminate blind weighing by guesswork balancing of the beam and substitute visible weighing with a plainly marked dial (2) speed up weighing by snubbing the scale's action with a simple dashpot (3) materially improve your weights by having every container accurate. An EXACT WEIGHT Indicator is a simple improvement . . . costs little yet saves so much in time and product. Write for details for your scale.



EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 9596

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAFETY IS NO ACCIDENT

Now, more than ever, the safeguarding of industrial workers is vital to maximum production. Every accident slows up operations.

Stonehouse Accident Prevention Signs cover every conceivable hazard. Hundreds of stock-worded signs are ready for prompt shipment. • Special wordings also produced to your specifications.

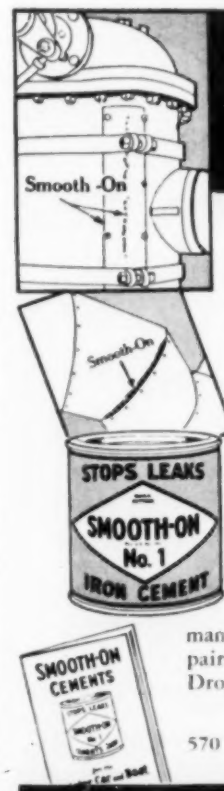
Our complete Catalog No. 9, in full color, is free on request.

Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building • 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 9597

Repairs both Cast and Sheet Metal



The quick-hardening, fast-clinging, temperature-resistant properties of Smooth-On No. 1 Iron Cement make it just right for countless repairs in industrial plants, shops, homes. It seals cracked castings, stops leaks in breeching, tightens loose rivets, bolts, screws and machine parts. Does not require use of heat or "gadgets." Any handy man can use it successfully. Buy Smooth-On No. 1 in 1-, 5- or 20-lb. size and keep it handy. If your supply house hasn't Smooth-On, write us.

FREE Famous Repair Handbook

Now in its 28th edition, this 40-page fully illustrated, pocket-size manual shows many short-cut, time-saving, money-saving repairs to machinery, equipment, pipe lines, etc. Drop us a line for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.
SO-292

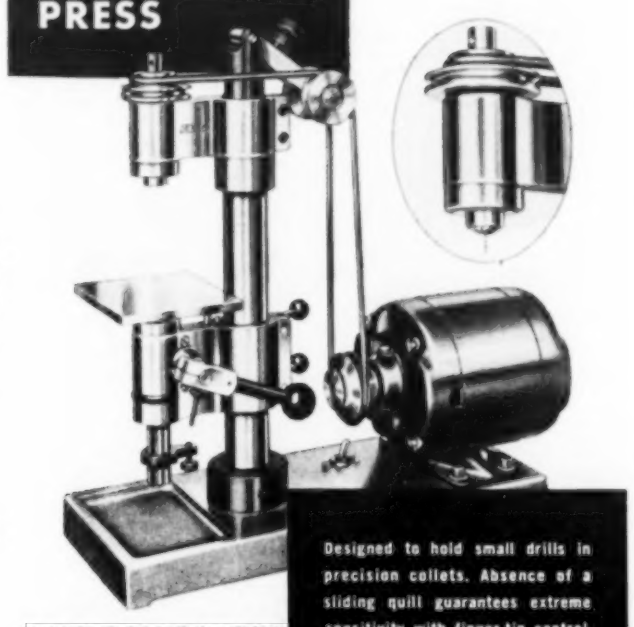
Do it with **SMOOTH-ON**
THE IRON REPAIR CEMENT OF MANY USES

If you write maker identify as **IEN - 9598**

LEVIN®

MICRO-DRILL PRESS

for holes as small as .002"



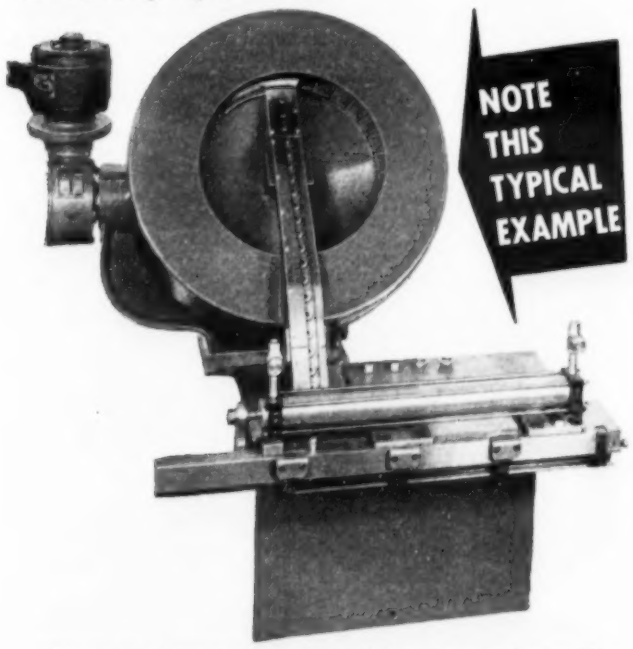
Designed to hold small drills in precision collets. Absence of a sliding quill guarantees extreme sensitivity with finger-tip control. A mounted ⅛" capacity drill chuck can also be used.

Write for Bulletin H describing the Micro-Drill Press and listing collet sizes. Louis Levin & Son, Inc., 782 E. Pico Blvd., Los Angeles 21, California.

If you write maker identify as **IEN - 9599**

HERE'S AUTOMATION AT ITS BEST

DPS Automatic HOPPERS, combined with DPS Engineering Skill provide outstanding time and labor-saving aid in this and hundreds of other unique assembly operations.



NOTE THIS TYPICAL EXAMPLE

Above is shown a motorized hopper and transfer mechanism whereby eight (8) valve retainers are selected, oriented and transferred out to proper spacing and dropped over eight (8) valve stems simultaneously, and BELIEVE IT OR NOT, ALL THIS IN ONLY FOUR SECONDS! . . . This unit is used as a part of a special machine developed for the semi-automatic assembly of valves in V-8 MOTORS . . . just one of innumerable applications where DPS Motorized Hoppers, Power Screwdrivers and other Assembly Aids are conserving valuable production time in thousands of plants.

GET THE FACTS—WRITE TODAY

LESS WASTE TIME, LESS LABOR, LESS COST!

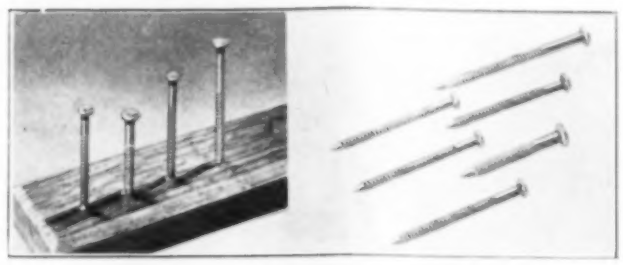
DETROIT POWER SCREWDRIVER CO.

2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as **IEN - 9601**

FASTENING . . Screw shank nail will not loosen after being driven

Source: PITTSBURGH STEEL PRODUCTS CO.
1416-A Grant Bldg., Pittsburgh 19, Pa.



For pallets, crates, strapping, floors

The company announces availability of its screw shank Gripper nail, previously developed for a single user. The nail can be supplied in sizes ranging from 6 penny to 7 gage, to 3½ in. in shank length and to 2⅛ in. in thread length. The thread is buttress design. Average holding ability is about double that of a smooth shank nail.

If you write maker identify as **IEN - 9602**

PLATING . . Chromium solution to salvage undersized gages and parts

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.

Above file-hard range

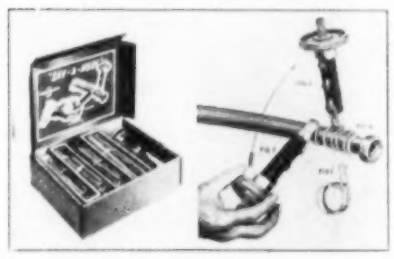
Chromasol No. 2 is a new concentrated solution to produce a hard heavy deposit with high abrasion resistance, particularly for building up worn or undersize work parts, gages and tools. It is a companion solution to the original Chromasol No. 1. It has been developed to use in the company's Chromaster plating equipment, previously described IEN-3660-52.

The solution applies on most metals in a deposit thickness of 0.015 in., or more, at the rate of 0.002 in. per hour. It is put into service after adding three parts of water to one part of the concentrate. It is packaged in quarts, gallons and carboys.

If you write maker identify as **IEN - 9603**

HOSE FITTING . . Wire clamps and tool for ¼ to 1 in. hose

Source: SQUIRE-COGSWELL COMPANY
4138-42 N. Kedzie Ave., Chicago 18, Ill.



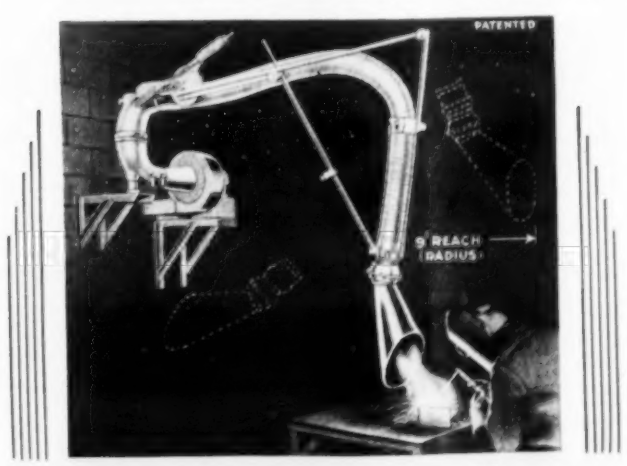
About $6

The company offers a new hose maintenance kit, under the trade-name Sav-A-Hose, based upon its wire clamp and tool, previously described IEN-10499-52. The kit includes the tool and 20 bands each for ¼, ½, ¾ and 1-in. inside diameter hose.

The wire band is formed around the hose, then is tightened and clamped with the tool. The connection is permanent and, when properly applied, will handle pressures to 500 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9604**



RUEMELIN Fume Collector

Removes Welding Fumes at the Source . . .

Your welding department should be well ventilated, free from welding fumes. You can make it that way, quickly and efficiently, by installing a Ruemelin Fume Collector. It produces a powerful suction that draws out noxious gases, smoke and heat at the source. Guards employee health, resulting in less welder fatigue, therefore, greater plant output. Clears shop air with minimum loss of building heat. Covers maximum welding area vertically, horizontally and by circle swing. Shipped assembled, easy to install. 9 ft. and 15 ft. sizes (radius of swing). Write for Bulletin 37-D.

These Fume Collectors are particularly helpful in winter months when doors and windows are closed.

RUEMELIN MFG. CO.

3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.

MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as **IEN - 9605**

Small precision metal parts... Torrington makes them better, and for less!

FREE CATALOG — shows the great variety of small parts we can produce inexpensively and promptly. Send for copy today!

If your product uses small precision metal parts . . . pivots, pins, dowels, rollers, mandrels, needles, punches, etc. . . . send us your blueprints for a prompt quotation.

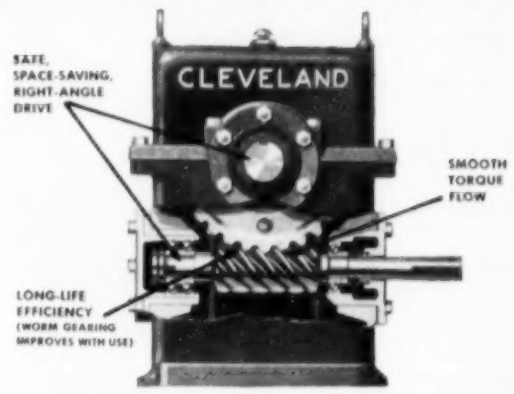
As a leading contract fabricator, TORRINGTON is equipped with the special machinery to produce in any quantity for quick delivery at low prices.

THE TORRINGTON COMPANY
Specialties Division
360 Field Street • Torrington, Conn.

Makers of
TORRINGTON NEEDLE BEARINGS

If you write maker identify as **IEN - 9606**

HERE'S A WORM GEAR DRIVE THAT IMPROVES WITH USE



EFFICIENCY in a Cleveland is high because bronze gear and nickel steel worm meet exact specifications precisely. Sliding action of worm on gear transmits power smoothly, quietly, with up to 50% increased resistance to shock and wear. Run in at the factory, a Cleveland drive actually improves with use. Right-angle design saves space.

Learn other Cleveland benefits! Write for Catalog 400. The Cleveland Worm & Gear Company, 3258 East 80th Street, Cleveland 4, Ohio.

THE CLEVELAND WORM & GEAR COMPANY
Speed Reducers

Affiliate: The Farval Corporation, Centralized Systems of Lubrication

If you write maker identify as **IEN - 9607**

NEED COPIES?
—produced in your own office

MODERN MIMEOGRAPHING — New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN SPIRIT DUPLICATING—Completely new A. B. Dick spirit duplicator produces 120 to 150 sharp copies a minute in 1 to 5 vivid colors from one master in one operation. Automatic feed—post card to legal size—16 lb. to 70 lb. stock.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections — (3) more successful filing — (4) marked superiority in resistance to fingerprints.

(MODERN FOLDING—small, low-cost A. B. Dick electric folding machine saves time and money.)

Write Dept. IEN-53 for full information—or call the A. B. Dick Distributor listed under Duplicating Products in the classified section of your phone book.

A·B·DICK
THE FIRST NAME IN DUPLICATING

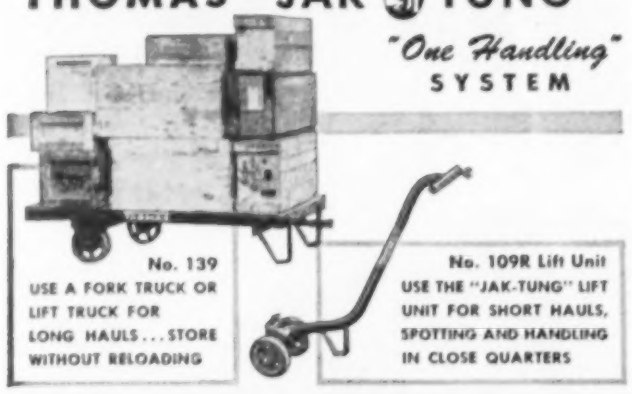
A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN-9608

FOR HAND OR POWER OPERATION

THOMAS JAK TUNG

"One Handling" SYSTEM



Move and store your loads without rehandling. Save time and manpower . . . storage and handling space with a THOMAS "JAK-TUNG" SYSTEM. Photo at right shows a "JAK-TUNG" truck being used with a Power Fork Truck and a "JAK-TUNG" Lift Unit for faster, more efficient handling, without loading and unloading. Truck capacities from 1750 to 6000 lbs. Can be "Job-Suited" to your needs with many THOMAS Superstructures. Available with special hitch for trailer train operation.

THOMAS TRUCK AND CASTER COMPANY
438 Mississippi River
KEOKUK, IOWA

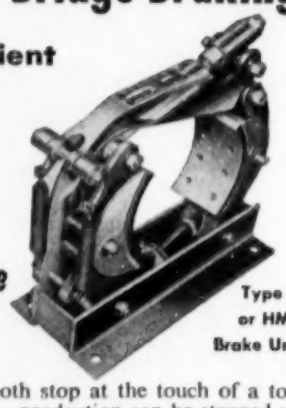
Send for Free Literature

If you write maker identify as IEN-9609

Now... Wagner Powered Hydraulic Crane Bridge Braking

for safer, more efficient Crane operation.

...More Torque
...Greater Capacity
...Less Operator Fatigue



Type H or HM2 Brake Unit

These new *Powered* Hydraulic Crane Bridge Brakes mean that your operators can bring even the largest crane to a safe, smooth stop at the touch of a toe. Loads can be spotted accurately—production can be stepped up—several brakes can be operated from one pedal—*all with less operator fatigue*!

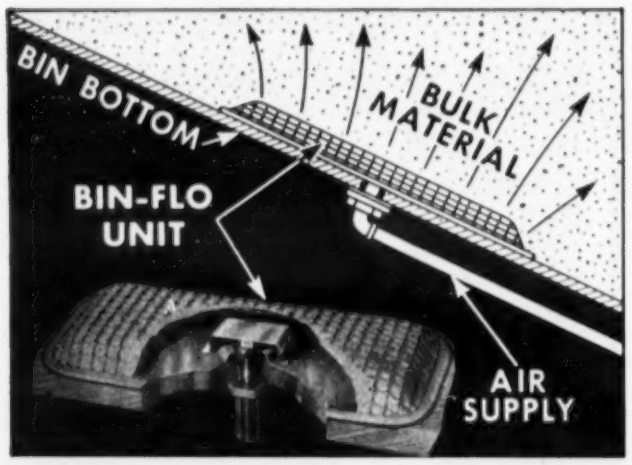
Wagner Powered Hydraulic Braking Systems are designed for applications where frequent starts and stops are necessary . . . where close spotting is used . . . where large heavy equipment is involved . . . and for applications where exceptional ease of brake operation is desired. Write for Bulletin IU-36.

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN-9610



BIN-FLO

USES SMALL VOLUME OF AIR AT LOW PRESSURE

KEEPS BULK MATERIALS MOVING

BIN-FLO units in bins, chutes, hoppers, etc., restore flow characteristics to dry, finely ground materials which tend to pack or bridge in storage. Types for all materials and conditions. No moving parts; simple installation; negligible operating cost; no maintenance cost.

BIN-DICATOR bin level indicator—"The Eyes of the Bin"—automatically reports levels of materials in storage; automatically controls filling machines; prevents waste.

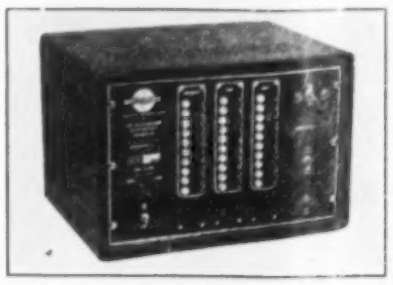
NEW 20-PAGE BOOK FREE

THE BIN-DICATOR CO.
13946-B Kercheval • Detroit 15, Mich.

If you write maker identify as IEN-9611

COUNTING . . Electronic equipment actuates relay at predetermined total

Source: UNIVERSAL MATCH CORP.
1503 Locust St., St. Louis 3, Mo.



Displays the count

Any total, from 1 to 1,999, can be counted by means of a photocell or magnetic pick-up impulse with this new Model PEC Unitronics predetermined counter. It mounts three decades reading in hundreds, tens and units. A switch adds 1,000. A second toggle switch on the housing face can be set for a single-count cycle and stop, or for repeat count. In the latter case the control resets and starts again.

A relay is actuated at the end of the predetermined count to stop a conveyor, switch a gate, replace a box. Counting speed is to 40,000 units per second. A mechanical reset register indicates the number of batches or predetermined totals that have been counted in a day or a week or other selected interval.

If you write maker identify as IEN-9612

CLEANING . . Liquid solution to bright dip copper, brass, bronze

Source: ROSSAUL COMPANY
168-72 Fifth Ave., New York 10, N. Y.

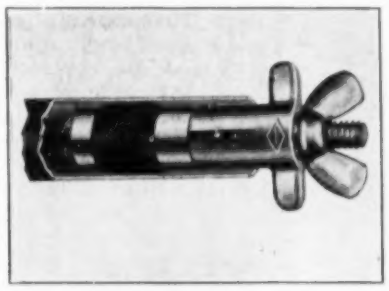
List price $4.50 in single gallons

New formula has been developed by the company for its Copper-Brite solution, previously described IEN-7140-49. The improved solution removes atmospheric oxides quickly and simultaneously passivates the metal so it will resist oxidation without surface coating for periods ranging from 3 to 6 months. The liquid is safe to handle. It is non-toxic, non-fuming and does not require special ventilation. It will not discolor silver solder and will not etch. Standard packaging is in 13-gal. carboys.

If you write maker identify as IEN-9613

SEALING . . Expanding plug temporarily closes opening in a tube

Source: IMPERIAL BRASS MFG. CO.
508 S. Racine Ave., Chicago 7, Ill.



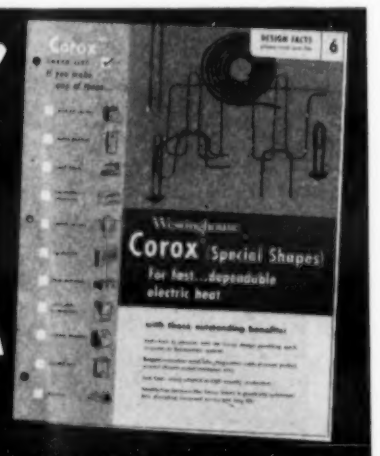
Bulletin 111-REF

Pressure to 100 lb. can be held in a tube line after its ends have been closed with this new plug. It is inserted in the tube and its wing nut is tightened to expand the synthetic rubber body against the tube wall. Application can be made to seal against leakage of liquids and gases. Five sizes range from ¼ to ¾-in. tube.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9614

Free! VALUABLE HEATING ELEMENT DESIGN DATA



Learn more about COROX®, the versatile, flexible, electric, tubular heating element. See how COROX can be formed into any shape or size to give your products the ultimate in heating perfection. Read of the many outstanding features COROX will give your design. Contains an excellent chart matching your requirements with the correct application of COROX. Remember, COROX will outlast the life of your product. Get valuable information about THERM-A-NEERING®... the free, and exclusive, heating element and thermostat design service, that saves you costly mistakes in early design stages.

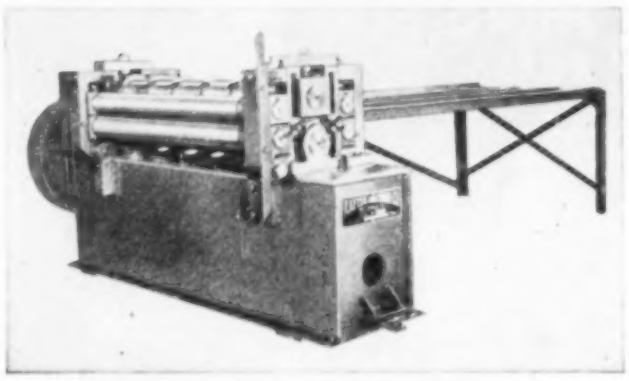
For COROX DESIGN FACTS No. 6 (B-5776), mark inquiry card, or write Westinghouse Electric Corp., Industrial Heating Dept., Meadville, Pa. J-10410

YOU CAN BE SURE.. IF IT'S Westinghouse

If you write maker identify as IEN-9615

RAFTER GANG SLITTER

For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES & PRESS BRAKE FORMING DIES

If you write maker identify as IEN-9616

ONE MILLION RELAYS

Over 1000 Types
24 HOUR DELIVERY FROM OUR STOCK!
- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Write for New 16 Page Catalog

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

Send us your relay requirements. You will receive immediate quotations.

samples on request. Phone, Wire or Write

Relay Sales
SEeley 8-4146
4721 W. MADISON STREET
DEPT. NO. 9 CHICAGO 44, ILLINOIS

If you write maker identify as IEN-9617

KROIL *CREEPS IN*

loosens frozen parts

11,500 industrial users depend upon this amazing new chemical tool when some frozen parts tie up valuable machinery or threaten production. They say . . .

"Kroil will loosen almost anything from an embalmer's needle to a bulldozer."

"We have excellent results loosening stuck slides on musical instruments."

"On a 25-year-old Bessemer gas engine, two bolts twisted off before . . . after using Kroil, they all came out easily."

"Before trying Kroil on heat treat trolleys we broke off every nut . . . since then, we have not lost one."

You too can get these results. Try KROIL on money-back basis. Gallon, $3.85; with Kroiler squirt gun, $4.95, f. o. b. factory.

Ask for GENIUS AT WORK—a free publication full of ideas for maintenance men.

KANO LABS. 1071 S. THOMPSON LANE NASHVILLE 11, TENN.

If you write maker identify as IEN-9618

Here's help for you on...

COMPOUND MELTING

You specify the size, shape and heat you require in a compound melting tank. *You* name the accessories . . . valves, lids, legs, controls . . . you need. *You* determine the hourly or daily capacity your melting tank must produce . . . together with allowable tolerances . . . and all other essentials.

Then let Sta-Warm go to work for you. Shortly you will receive a specific proposal to match every item you specified, a plan that is highly efficient because it will be based on the time-tested "Sta-Warm Method" of designing and building compound melters for an almost infinite variety of applications over a period of 30 years.

Why not write today for a brief resume of the "Sta-Warm Method". No obligation. *Address* . . .

View showing how heating element covers entire sidewall and bottom of typical Sta-Warm tank.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN-9619

For concentrated HEAT for confined areas

CHROMALOX *Electric* CARTRIDGE HEATERS

SAFE • EFFICIENT • EASY-TO-INSTALL

Chromalox Electric Cartridge Heaters provide dependable heat when and where you need it at the temperatures you require. Dies, molds, platens, moving parts, etc. are quickly and accurately heated to controlled temperatures required for most efficient production. Lengths up to 40", diameters ⅜" to 3½", ratings 30 to 8750 watts.

GET CHROMALOX CATALOG 50 For Complete Details

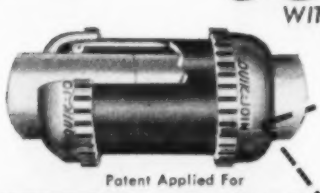
Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Electric Heaters Advertisement, Page 8

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN-9620

NOW - You Can JOIN PIPE WITH ONLY A WRENCH!



in less than a minute!

Patent Applied For

QUIK-JOINT

Thoroughly proven in a great many different applications, *QUIK-JOINT* cuts down time-consuming pipe connections from the usual 30-45 minutes to less than a minute!

You simply insert ends of pipe in a *QUIK-JOINT* and tighten with a wrench —that's all. No pipe threading! No cumbersome tools!

Write for Catalog!

For Working Pressures to 2000 P.S.I.

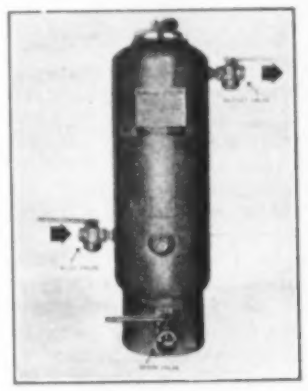
Sizes: ½" - ¾" - 1" - 1¼" - 1½"

QUIK-JOINT
COUPLING DIVISION
AUTOMATIC BENDING COMPANY
406 E. 159th ST. HARVEY, ILLINOIS

If you write maker identify as IEN-9621

DRYING . . Dehumidifier and filter to dry and to clean compressed air

Source: VAN PRODUCTS CO.
3783 W. 12th St., Erie, Pa.



For clean dry air

Rating is 180 cfm. of free air per min. through this new design of the Vi-Speed combined dehumidifier and filter, previously described IEN-12195-51. The new assembly employs large baffle surfaces in new positions for exposure of foreign matter in the air to the action of the drying agent, a large area for separation of heavy impurities and a self-adjusting nozzle. The latter provides automatic air control under varying pressure conditions.

Compressed air with entrained moisture, oil, foreign matter enters near the bottom through a valve equipped tangential connection. It picks up Dryolite solution that drips down from above and atomizes this solution ino a fine mist to mix with the air and pick up moisture. Large particles of moisture, oil and foreign matter separate out due to centrifugal action. They fall to the bottom of the compartment where they are blown out through a drain connection at intervals.

The air turns upward and passes through a center section where the Dryolite-wetted baffles attract and remove additional moisture. The air and any remaining moisture finally enter a filter bed made up of granules of the soluble Dryolite. Final moisture is removed at this point and the dry, clean air issues from a valve equipped connection near the top of the housing. The Dryolite is compounded to operate satisfactorily in temperatures from below freezing to 100 deg. F.

If you write maker identify as IEN-9622

WRENCH . . Torque limiting design releases pull at adjustable setting

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.

Spring controls release

Six new inch-pound units have been added to the company's line of foot-pound torque limiting wrenches, previously described IEN-1249-53. Three models have plain heads and three have built-in reversible ratchet heads. Drive sizes are ⅜ and ½ inch. Capacities are 100 to 750 inch-pounds and 700 to 1,600 inch-pounds. Appearance of the six models is illustrated.

Desired torque is set by turning the knurled handle in connection with a scale, in a manner similar to a micrometer. Any setting within the limits of the wrench can be locked so it cannot shift. When the pre-set torque is reached, as the operator pulls on the handle, the wrench releases and signals with a positive reflex action. Resetting takes place on pressure removal from the wrench handle.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9623

CUT IDENTIFICATION COSTS

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate fibre, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTED IN 125 PRINCIPAL CITIES

WIRE MARKERS
PIPE MARKERS
SAFETY SIGNS
PRINTED ROLL TAPE
MASKS & STENCILS

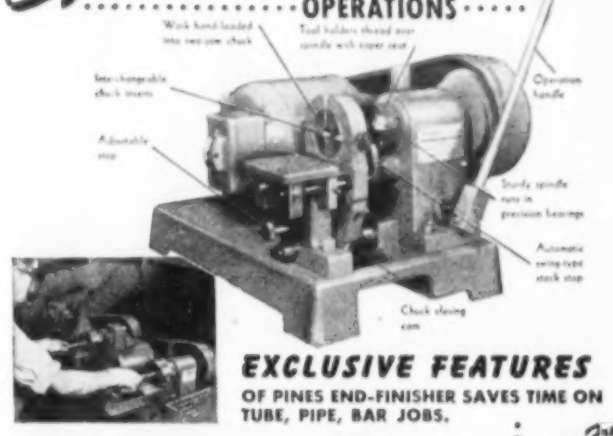
MANUFACTURERS OF SELF-STICKING PRODUCTS

W.H. BRADY COMPANY

769 W. GLENDALE AVE., MILWAUKEE, WIS.

If you write maker identify as IEN-9624

Speeds CHAMFERING, POINTING, FACING, REAMING OPERATIONS



At Keid-Hold Mfg. Co., two Pines Air-Operated Machines with single foot control speed tube deburring and facing operations. One operator produces 1200 tube ends per hour.

EXCLUSIVE FEATURES

OF PINES END-FINISHER SAVES TIME ON TUBE, PIPE, BAR JOBS.

Write for Free Bulletin

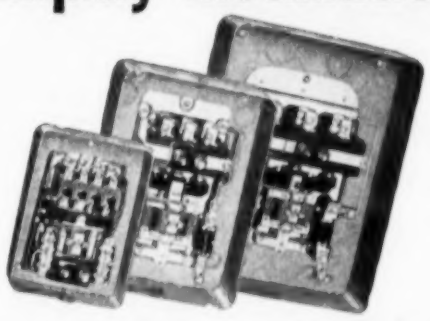
Pines Portable End-Finisher is especially designed for fast, accurate work. Small and compact, its exclusive operating features save time. Forward travel of operating lever clamps and feeds work to rotating cutters in one pass. Operator always has one hand free for stock handling. Equipped with quick, interchangeable tool holders, chuck inserts, 8-speed sheave (760 to 3920 rpm), sturdy spindle, grease-sealed precision bearings. Unit illustrated handles stock diameters up to 2". Maximum feed stroke is 1¼". Automatic air-operated units for higher production work and larger sizes up to 5" capacity are also available.

▲Write today for more facts. Learn how these machines are built to save time on a wide range of work.

PINES ENGINEERING CO., INC.
Specialists in Tube Fabricating Machinery
630 WALNUT • AURORA, ILLINOIS

If you write maker identify as IEN-9625

Compact motor starters simplify installation



The compact unit construction of Ward Leonard a-c across-the-line magnetic starters makes installation easy.

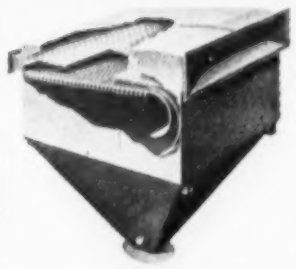
Complete accessibility of all parts simplifies inspection. They are designed with high current interruption capacity and for long, trouble-free operating life.

Open types for machine tool and panel builders or enclosed types as shown are available in seven NEMA sizes, from 1 to 200 hp. Order now for immediate delivery. Or write for Starter Bulletin 4110. Ward Leonard Electric Co., 33 South Street, Mount Vernon, N. Y.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RHEOSTATS • RELAYS • CHROMASTER

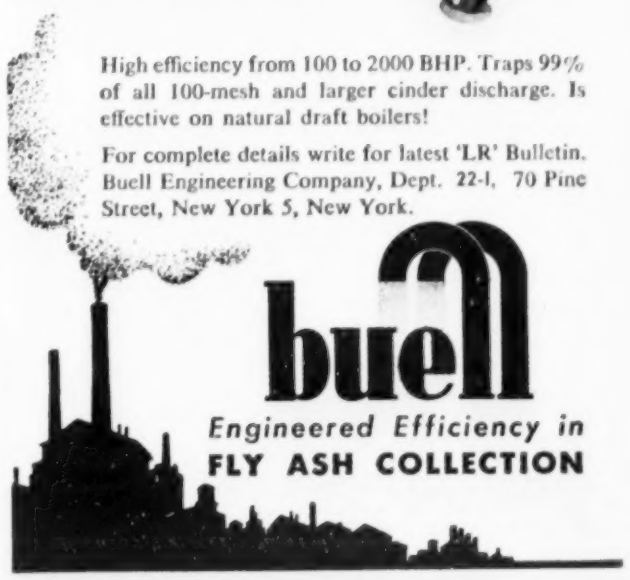
If you write maker identify as IEN-9626

Buell-designed 'LR' Collector Stops Fly Ash From Small Boilers!



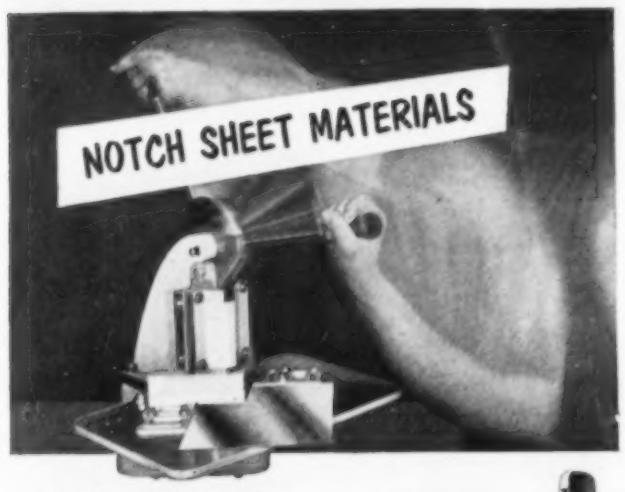
High efficiency from 100 to 2000 BHP. Traps 99% of all 100-mesh and larger cinder discharge. Is effective on natural draft boilers!

For complete details write for latest 'LR' Bulletin. Buell Engineering Company, Dept. 22-I, 70 Pine Street, New York 5, New York.



buell
Engineered Efficiency in
FLY ASH COLLECTION

If you write maker identify as IEN - 9627



Quickly, Easily with a

DI-ACRO* NOTCHER

Speed up notching operations, eliminate the need for heavy presses and dies. A 6"x6" notch is made in 16 gauge material in one operation. Also perform many shearing jobs.

NEW DI-ACRO POWER NOTCHER

Especially designed for operations where a high rate of production must be maintained. Motor driven flywheel and all moving parts housed in welded steel cabinet.

WANT MORE INFORMATION?

Send for 32-Page Catalog

*pronounced DIE-ACK-RO

Creators of "DIE-LESS DUPLICATING"

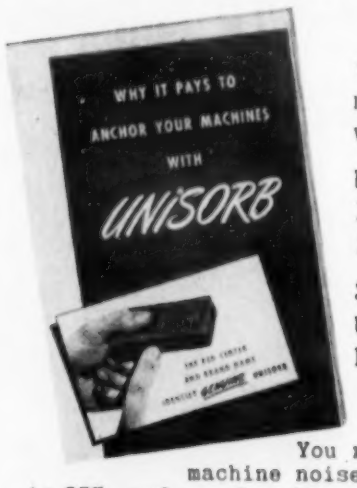
di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue, Lake City, Minn.

If you write maker identify as IEN - 9628

2651 McCasland • East St. Louis, Illinois

If you write maker identify as IEN - 9629



to mount your machines without...

bolts
lag screws
floor damage

Send for the UNISORB® Booklet

You reduce transmitted machine noise and vibration up to 85%, and you lengthen machine life, when you use UNISORB mounting pads. And there is no danger of the machines "walking" when mounted this easy way. Send for your copy of the booklet describing this modern way to mount machines.

RETURN COUPON TODAY!

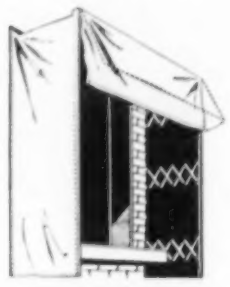
the **FELTERS** company, 208 South St. Boston, Mass.
Please send me a copy of "Why It Pays to Mount Your Machines on UNISORB" — at no obligation to me.

Name.....Title.....
(Please Print)
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as IEN - 9630

PROTECTING . . Dock cover rainproofs from dock to car or truck

Source: A. MAMAUX & SON
122 Blvd. of Allies, Pittsburgh 22, Pa.



Beats the weather

Support is provided for this new Amson dock cover by three sets of parallel arms on each side. No bottom bar is required that might be in the way of a backing truck or of a freight car being brought into position. The roof of the cover slopes so rain will run off. An adjustable front flap laps over a truck roof or can be placed inside a car door opening.

The complete unit folds back against a wall when it is not in use. It is made of waterproof canvas. Frame and hardware are galvanized. Fixtures are secured on the single side bar for quick installation on the wall.

If you write maker identify as IEN - 9631

CLEANING . . Alkaline compound for metal prior to vitreous enameling

Source: DETREX CORPORATION
14329 Woodrow Wilson, Detroit 32, Mich.

Good emulsifier forms no sludge

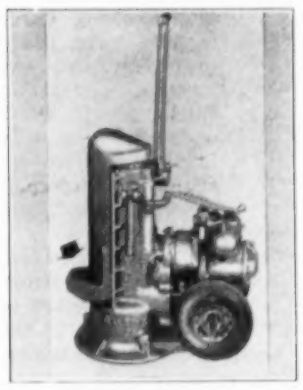
Detrex 63 is a new alkaline cleaning material supplied in granular form for solution in water in the ratio of 6 to 8 oz. per gallon. The solution can be boiled continuously without affecting concentration of the compound in solution.

It is employed to clean metal work parts prior to vitreous enameling, to remove all traces of soil including non-pigmented drawing and stamping compounds, mineral and vegetable oils, grease, quenching oils. The solution has excellent wetting and penetrating properties.

If you write maker identify as IEN - 9632

JACK . . Screw type 75 ton unit, Ingersoll-Rand pneumatic motor drive

Source: JOYCE-CRIDLAND COMPANY
2025-29 E. 1st St., Dayton 3, Ohio



Foot lift design

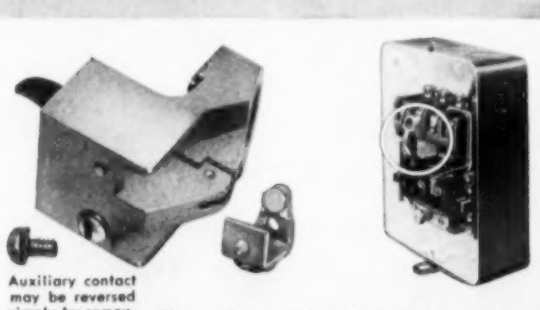
New jack assembles a ball bearing geared screw to raise and lower a load foot between 9 and 13¾ in. above the floor. The screw is driven by an Ingersoll-Rand rotary pneumatic motor in connection with automatic shut-off at the upper and lower limits of the vertical travel. The assembly is mounted on roller bearing semi-pneumatic wheels. It stands on an integral base, with the wheels clear of the floor, in operation position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9633

HANDY AUXILIARY

CONTACTS



Auxiliary contact may be reversed simply by removing one screw.

These new, compact, auxiliary contacts can be added to the arc hood of all Allen-Bradley standard Sizes 0, 1, 2, and 3 solenoid starters, contactors, reversing switches, and combination starters. The operating lever of the auxiliary contact is actuated by the up-and-down motion of the crossbar on which the moving contacts are mounted. Write for complete information.

Allen-Bradley Co.
1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY
QUALITY
SOLENOID CONTROLS

If you write maker identify as IEN - 9634

Here's the easy way to spot railroad cars

It's no back-breaking job to move railroad cars—when a Link-Belt Car Spotter is on the job. One man can take two or three turns of rope on the motor-driven capstan—and spot cars right where they're wanted. Cuts loading and unloading time. Reduces demurrage charges. Two sizes: 5 and 10 hp, developing 5,000 and 10,000 pounds of rope pull, portable or stationary models.

Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

Cuneo Press, Chicago, has used Link-Belt Car Spotters for 20 years.

LINK-BELT

CAR SPOTTERS

Write today for fact-packed Book 2092

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices in Principal Cities. 13,161

If you write maker identify as IEN - 9635

LIKE AN

ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:
$88.91 if coal (9879 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (84,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.

"EASY-TITE" Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,

Edition O, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your new Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-93.
2503-05 Third Avenue, New York 51.

as advertised in THE SATURDAY EVENING POST

SEXAUER

WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as **IEN - 9637**

• it takes imagination to put into your product all the benefits your customers want . . . and that's where Rigid-tex Metals come into your product picture. every sheet or strip of Rigid-tex Metal has clear-through pattern design . . . as much as 108% greater rigidity . . . 70% greater buckling strength . . . 39% greater impact resistance . . . 92% greater tensile strength! and what's more, Rigid-tex Metals can be used for nearly every product under the sun!

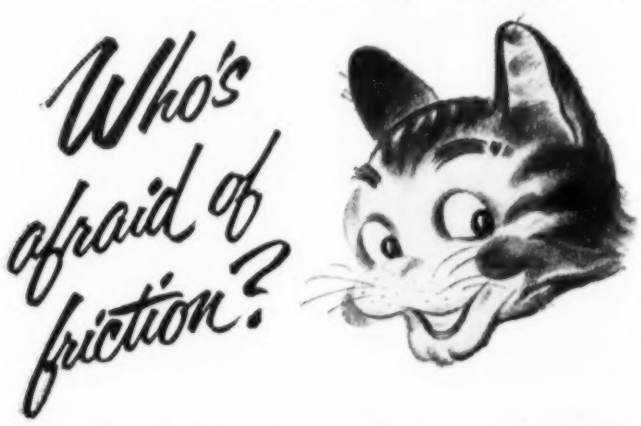
send for your Design Imagineering Folder . . . on company letterheads, please.

RIGIDIZED METALS CORPORATION
6649 OHIO STREET BUFFALO 3, N. Y.

50 Warehouses and Sales Representatives in All Principal Cities Throughout the U. S. and Canada

U. S. & Foreign Patents

If you write maker identify as **IEN - 9638**



Ever wonder why Tide Water formulates over 300 industrial lubricants? The answer can save you many hundreds of lost lubrication dollars! Because the problems of friction are varied . . . we believe that each job requires a *specialized* lubricant, an oil or grease specifically designed for peak efficiency . . . at lowest cost. And we're constantly on the lookout for formulas that do an even better job. That's why we say: When it comes to selecting the proper lubricant—be specific. Ask your local Tide Water representative for the *one* Tycol lubricant that's *engineered to do the job!*

TYCOL — **TIDE WATER ASSOCIATED OIL COMPANY**
17 BATTERY PLACE - NEW YORK 4, N. Y.

Refiners and Marketers of Veedol . . . The World's Most Famous Motor Oil

If you write maker identify as **IEN - 9639**

. . . to install this waterproof push-button switch!

Here's the ideal switch for low current use! It's quickly installed . . . works perfectly under water, or from 65° below zero to 165° above . . . and withstands salt spray, shock and vibration. Mechanism is permanently encased in a special molded rubber compound with waterproof ordnance-type leads vulcanized to the case, connectors waterproof when required. Continuous rating of 10 amps. at 15 or 30 volts D.C. or 125 volts A.C. Single throw, one circuit, normally "open." Part of our extensive *standard* line of waterproof switches. We also offer complete design service on "specials." Send problem details for full information.

See us at the Refrigeration & Air Conditioning Exposition, Cleveland, Nov. 9-12. Booth No. 842.

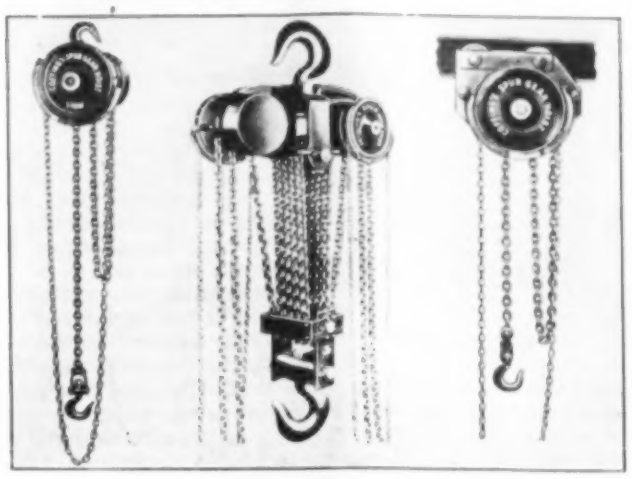
Riverside MANUFACTURING AND ELECTRICAL SUPPLY CO.
10215 MICHIGAN AVENUE • DEARBORN, MICHIGAN • PHONE TIffany 6-6800

WIRING HARNESSES AND ASSEMBLIES • CORD SETS • HEATER AND EXTENSION CORDS • ELECTRICAL SWITCHES • RELAYS • MOLDED RUBBER PRODUCTS

If you write maker identify as **IEN - 9640**

HOIST . . Hand chain hoist, single and multiple, 1/4 to 25 ton

Source: COFFING HOIST CO.
802 Walter St., Danville, Ill.



Three typical units

New designs for normal and for low head room applications, to a total of 55 models and sizes, have been added to the company's line of spur gear hand chain hoists. There are also several units, rating ¼ to 3 ton, with extended hand wheel shafts for applications such as handling hot materials and large bulky loads or where there is danger of scratching finished surfaces with the operating chain. The extension is maximum to 10 ft. so the operator can stand at a distance from the load.

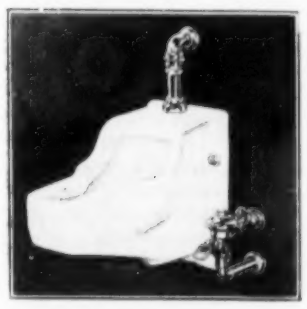
The new designs are Timken bearing assemblies. They are companion units to the company's Model-YC ball bearing hoist, in capacities from ½ to 5 ton, and the light weight Challenger units available in ½, 1 and 2 ton ratings.

Clevis connected assemblies are employed where head room prevents use of a standard hoist and trolley. In this case, head room is gained by removing the top hook and suspending the hoist from a special trolley. The arrangement saves 3 to 16 in. of head room depending on the size of the hoist.

If you write maker identify as **IEN - 9641**

WASHROOMS . . Women's urinal for standing use, need not be touched

Source: KOHLER COMPANY
1230 High St., Kohler, Wis.



Promotes cleanliness

Concealed rim jets cleanse the elongated bowl of this new Hygia urinal swiftly and quietly when the concealed or exposed flush valve is operated. The unit's rounded edges and vitreous surfaces make it easy to keep clean. Overall height and width are 23 by 12 inches. Wall to front measures 28 in. and floor to flare top is 18 in. in a standard installation.

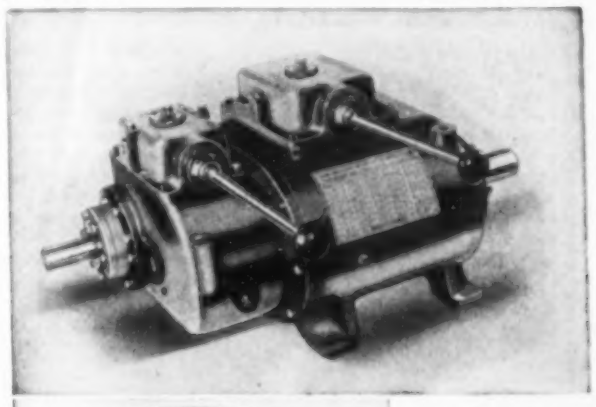
The unit is for standing use and need not be touched. It can be installed like a regular water closet in a washroom compartment. It can be used to replace certain of the standard fixtures in modernization work.

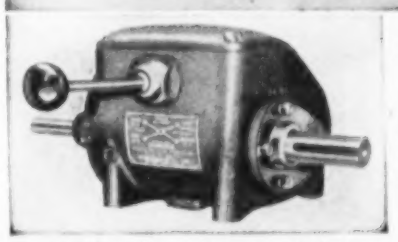
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9642**

If you write maker identify as **IEN - 9643**

WESTERN "SUPER" *with* 8 SPEED CHANGES
For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. Capacity 50 H.P. in geometric progression of 1.29 (total reduction of 6:1)





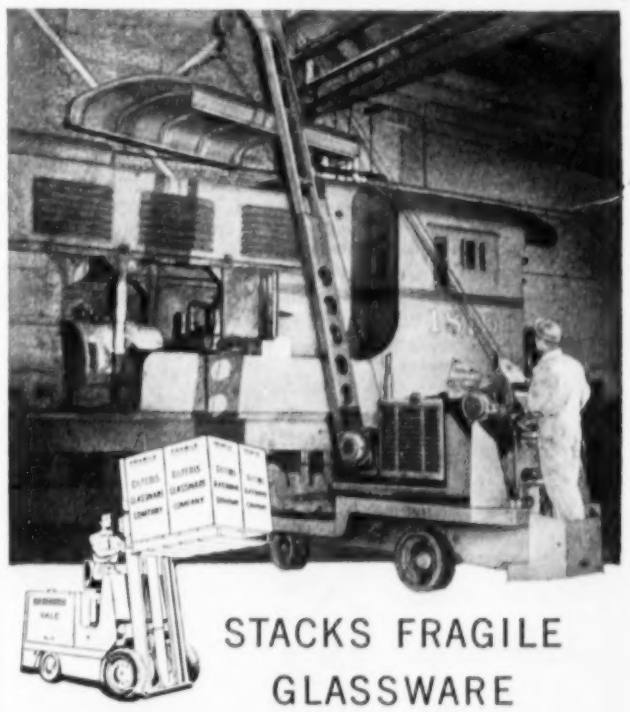
(left) "900 8 series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type.
Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adopted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h. p. For Materizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.
WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. — 5400 SCOTTEN — DETROIT, MICHIGAN

If you write maker identify as **IEN - 9644**

LIFTS THE LID ON A LOCOMOTIVE



Yale Electric Trucks give safe handling . . . cut costs as much as 75%

DIFFERENT LOADS call for different equipment—and the comprehensive YALE line offers exactly the truck your job requires, whatever your business may be.

Because YALE Trucks offer these special features: Hypoid Gears, Involute Spline Drive Shafts, and Yale Lift Channels, users report costs reduced as much as 75%.

YALE's wide variety of models includes Gas, Diesel, LP-Gas, Gas-Electric, and Electric in capacities up to 100,000 lbs. Attachments available for specialized handling jobs.

YALE*

MATERIALS HANDLING EQUIPMENT

**Registered in U. S. Patent Office*

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 369
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.
Please send my free copy of *Picture Story of Yale Materials Handling Equipment.*

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Mfg. Co., St. Catharines, Ontario, Canada

Gas, Electric, Diesel Lift Trucks • Worksavers • Hand Trucks Hand and Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 9646

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 9647

hand pushed

TROLLEYS

Webb Hand Pushed Trolleys are sturdily built for long life and minimum maintenance. Hardened steel wheels equipped with retainer type ball bearings assure long wearing properties and ease of operation. Triple labyrinth seals keep lubricant in and dirt out. Side guide rollers effectively eliminate binding and excessive wear, especially when moving loads around curves. For simple, inexpensive and easy handling of materials, use Webb Hand Pushed Trolleys.

P-2530
4" to 10" I-Beam; ½ Ton.

FOR BULLETIN AND PRICES WRITE TO:

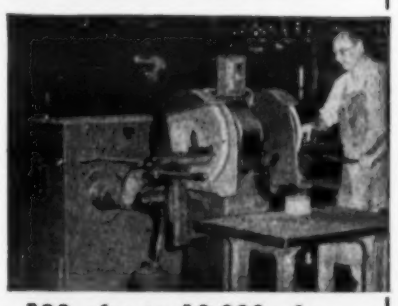
JERVIS B. WEBB COMPANY
8915 ALPINE AVE.
DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES
CONVEYOR ENGINEERS AND MANUFACTURERS

If you write maker identify as IEN - 9648

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 9649

TIMING . . Work card time stamp marks start, elapsed time, and the date

Source: CALCULAGRAPH COMPANY
304-8 Sussex St., Harrison, N. J.

Lever operated

New design of the electric models in the company's line of time stamping equipment includes a date line as well as starting and elapsed time. The new line appears under the starting time dial. It assists in eliminating clerical errors in the dating operation.

One machine can handle any number of cards in any sequence. It employs two operating levers. One is moved forward and then back to print the starting time on a card positioned on the housing top. This operation also dates the card in the new electric models. The other is moved forward after the card has been again placed in marking position to print the elapsed time in hours and tenths.

If you write maker identify as IEN - 9650

INSULATING . . Silicone enamel for high temperature magnet wire

Source: DOW CORNING CORP.
P. O. Box 592-A, Midland, Mich.

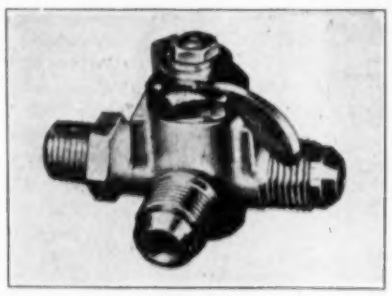
Technical data upon request

Wire enamel No. 1360 is a new silicone base material that has been developed by the company and applied in test service on a number of motors. The material remains serviceable after extended periods of operation at temperatures ranging from 300 to 400 deg. F. The coating is water repellent and resistant to attack by moisture and to a number of acid solutions and solvents. The enamel is designed for application and curing in conventional magnet wire tower equipment. It can be applied to the wire by die application or by dip coating.

If you write maker identify as IEN - 9651

VALVE . . Three way cock connects burner to two fuel oil tanks

Source: ANDERSON BRASS CO.
5300 Twelfth St., Detroit 8, Mich.



Lever points to source

Four sizes for this new Kantleak valve cock are ¼ to ⅜-in. tube and ¼-in. pipe. The unit is made of forged brass. Its body is solid at the bottom and is packed at the top for leak tight operation. Turning the plug lever connects a burner to either of two sources of supply for fuel oil handled by the valve.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9652

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. screws, drive pins for bay-Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carries hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works**, 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 9653

New, Larger COVER GOGGLES

fit over ALL modern glasses . . .

New CESCO series 548 and 549 Cover Goggles are 20% larger than former cover goggles. Contoured edges with wide surfaces eliminate pressure on nose, seal out flying particles or light flashes. Standard 50 mm lenses are quickly changed from front. Both chippers and welders models are well ventilated to reduce fogging. Simplified bridge adjustment. 3 headbands.

See or write your CESCO safety equipment distributor for full details

Features

- Lightweight sturdy plastic, contoured edges
- Ventilated lenses with baffled air flow
- Sideshields— Baffled for welding Perforated for chipping or grinding

CHICAGO EYE SHIELD COMPANY • 2326 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 9654

NEW! FAST! EASY!

PRINT FACSIMILE LABELS DIRECT TO CONTAINERS

Here's the new system that eliminates labels and the old stencil board—ink brush method of addressing and marking shipping containers. With the new Web-O-Print JC-3 hand printer and a Kustom-Kut (die-cut) stencil, you can print both facsimile label and shipping information direct to cartons or boxes *in one operation* . . . at the rate of 40 to 50 cases per minute!

Kustom-Kut stencils are pre-cut to print your label or form. Address and other variable information are typed in . . . stencil is quickly attached to Web-O-Print . . . label and address are then printed on container in a single movement.

Web-O-Printing is a fast, clean one-hand operation. Prints on rough and cylindrical surfaces. Leaves a sharp, compact, fade-proof and waterproof print. Can be easily blocked out for re-shipping.

FREE SAMPLE PRINT Write today for a sample print and information on trial offer. No obligation.

Weber
LABEL AND MARKING SYSTEMS
Division of Weber Addressing Machine Co.
Dept. IE-2, Mount Prospect, Ill.

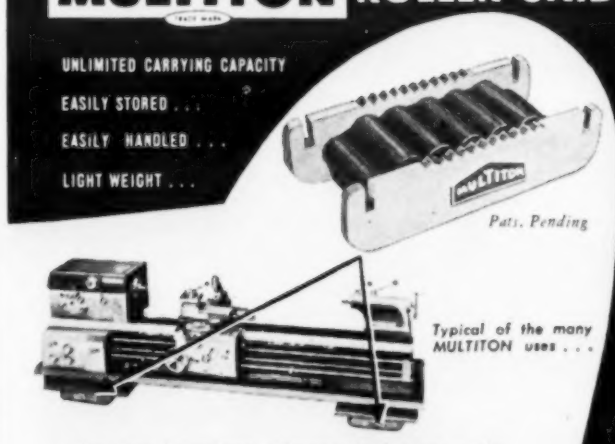
If you write maker identify as IEN - 9655

A BETTER WAY . . .

TO MOVE MACHINERY AND HEAVY EQUIPMENT

THE MIGHTY MULTITON ROLLER SKID

UNLIMITED CARRYING CAPACITY
EASILY STORED . . .
EASILY HANDLED . . .
LIGHT WEIGHT . . .



The first important advance in heavy equipment moving in years! MULTITON moves machinery and other heavy equipment easily — with great savings in labor. Just set tremendous loads on MULTITON and roll away.

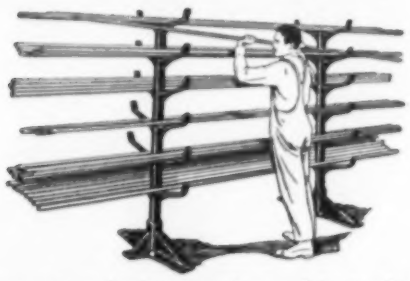
Write for Bulletin IE

DEALER INQUIRIES INVITED

STOKVIS & EDERA & CO., INC.
95 MADISON AVE., NEW YORK 16, N. Y. • MU 3-4935

If you write maker identify as IEN - 9656

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

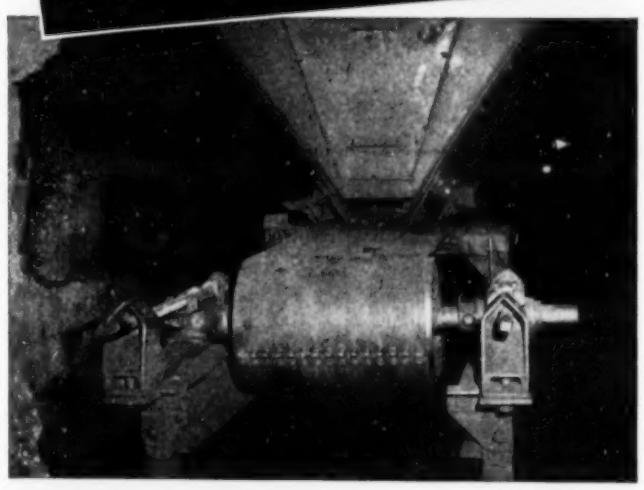
All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 9657

Better rubber products are made with Du Pont NEOPRENE



Neoprene-covered conveyor belt outlasts other belts 4 to 1 carrying hot sand in foundry

A large steel castings company was plagued by frequent breakdowns of the conveyor belt on its shake-out machine. Jagged fragments of metal and hot sand at temperatures of 200° to 500°F. were cutting service life of asbestos conveyor belts to 90 days. A production bottleneck threatened until a heat-resistant neoprene-covered belt was installed.

The neoprene belt lasted four times longer than the asbestos belts—*one full year of trouble-free operation!* On this application, the severe abrasion conditions rapidly wore away asbestos belts; ordinary rubber belts soon failed from the intense heat. These are rugged service conditions for *any* conveyor belt . . . and offer striking proof of neoprene's toughness and its resistance to heat and abrasion.

This same dependability can be found in thousands of neoprene products currently lowering production costs throughout industry. While Du Pont makes no finished goods of neoprene, your manufacturer or distributor will be glad to tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Each issue describes new neoprene products . . . improved old products . . . tips on reducing maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Div, IE-9, Wilmington 98, Delaware.

NEOPRENE

The rubber made by Du Pont since 1932

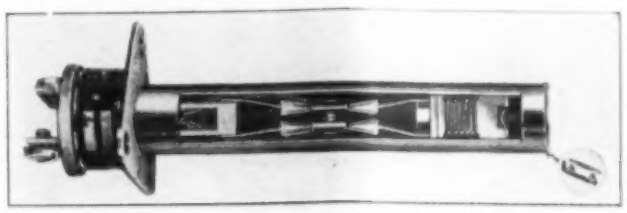
DU PONT

BETTER THINGS FOR BETTER LIVING . . . *through Chemistry*

If you write maker identify as IEN - 9659

THERMOSTAT . . Sealed assembly limits rate of temperature increase

Source: FENWAL INCORPORATED
216-20 Pleasant St., Ashland, Mass.



Thermoswitch assembly

New assembly of the company's thermostat employs a temperature sensitive bellows at one end of the contact assembly within the thermostat's heat sensitive tube. This bellows expands and opens the control circuit when rate of temperature rise is greater than a predetermined amount for which the bellows has been set.

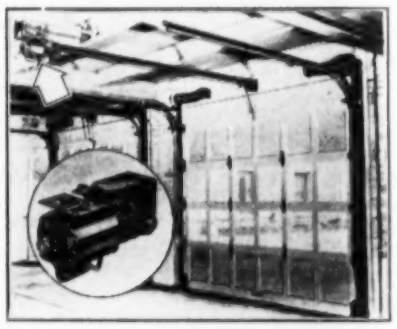
The circuit is held open to prevent over-shoot and until the rate of temperature increase falls below the predetermined level. The contacts close again at this point and the heating cycle is resumed. Application can be made in any ambient temperature between minus 100 and plus 500 deg. F. The control can be set for a desired heating rate between 10 and 100 deg. F. per minute.

A triangular flange provides for mounting. The cartridge extends 3¾ in. beyond the mounting flange and is ⅝ in. in diameter. Overall length is about 4¾ inches. Weight is ¼ pound. Contact rating is 5 amp. on 110-volt ac., 2 amp. on 28-volt dc. power supply.

If you write maker identify as IEN - 9660

DOOR OPERATOR . . Motor drive opens and closes overhead rolling door

Source: BARBER-COLMAN CO.
1312-16 Rock St., Rockford, Ill.



Bulletin F-5685

Overhead doors, to 12 ft. in height and to 150 sq. ft. in area, can be opened and closed smoothly and quickly with this new Model-L electric operator. It is a small companion unit to the Model MC, previously described IEN-5509-39. It employs a reversing ¼-hp. motor for operation on 110-volt ac.

A limit relay controls stopping at both extremes of travel. A clutch permits the door to stop, without overloading the motor, if the door meets an obstruction. Operation centers at a momentary contact pushbutton station for "open", "close", "stop", or can be specified for the company's radio control.

The motor and drive mechanism assemble overhead at one end of a horizontal track. A ½-in. pitch roller chain operates over sprockets at the drive and door end of the track in a closed loop with a "car" that rides the track. An adjustable rigid link connects between the car and the door. An idler sprocket rides the chain at the motor end to actuate the control equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9661

How to Build Your Own Overhead Conveyor

This 28-page booklet tells you in detail how to layout your overhead monorail, power conveyor, select all the parts needed and erect it in your plant. All elements are fully illustrated with sizes and capacities given.

WRITE FOR YOUR COPY TODAY

Mechanical Handling *Systems, Inc.*

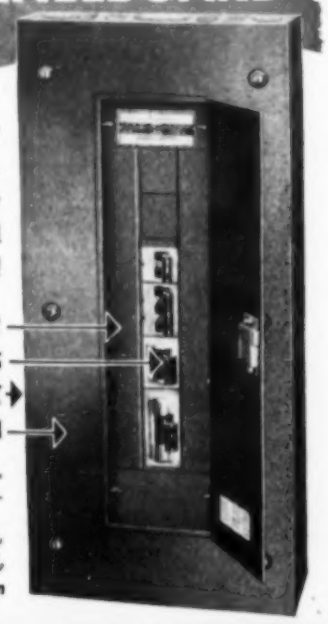
4605 NANCY AVE. • DETROIT 12, MICH.

Offices in Principal Cities

In Canada: Canadian Mechanical Handling Systems, Toronto Ltd.

If you write maker identify as IEN - 9662

SQUARE D's MHP DISTRIBUTION PANELBOARD



So easy to order and stock. "Off-the-shelf" delivery of packaged components!

INTERIOR
"PLUG-IN" BREAKERS
BOX
TRIM

for 240 Volt, 3 Phase, 3 or 4 wire power systems.

Write Square D Company, 6060 Rivard St., Detroit 11, Mich., for descriptive bulletin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 9663

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

W.H. BRADY COMPANY

743 W. GLENDALE AVE., MILWAUKEE 12, WIS.

If you write maker identify as IEN - 9664

versatile OKOLITE-OKOPRENE cables

. . . UNDERGROUND, IN CONDUIT, AND OVERHEAD

Okolite-Okoprene cables were installed recently in a large paper mill to handle the power and control circuits for a Kaymr Pulp Drying Machine. Leads for the synchronized generators, for motors and circuit breakers, the self-supporting aerial cables from substations to the power house, as well as pushbutton station and lighting system wiring, were all Okolite-Okoprene.

Okolite-Okoprene cables are highly resistant to all attacking elements. They may be used in wet, dry, hot or cold locations, underground or in conduit. Write for Bulletin IE-1053 for full information. The Okonite Company, Passaic, N. J.

1743

OKONITE *insulated cables*

If you write maker identify as IEN - 9665

Use PISTON RINGS? Original or Replacement

Find out what we can do on PRICES and SERVICE

We specialize in supplying small quantity Piston Rings QUICKLY and ECONOMICALLY. We are set up to make rings up to 35" diameter and do it quickly—no long delays. Since 1921 millions of Auto-Diesel Piston Rings have been used as original equipment or replacement in compression, hydraulic cylinders, valves, etc.

LONG WEARING RINGS

Auto-Diesel Rings have made outstanding records on die casting machines. In many cases where shutdowns were frequent and costly before using Auto-Diesel Hard Steel Plunger Rings—they operate for months without a shutdown caused by ring failure. We can supply rings, gaskets and circular parts for a large variety of machinery including marine, aircraft, locomotive, hydraulic, compressed air, steam, refrigerator, etc., etc. We specialize in precision parts and rings for the aircraft industry. Our Engineers are qualified to help you with ring problems. WRITE TODAY.

Write to

THE AUTO-DIESEL PISTON RING CO.
3139 Superior Avenue • Cleveland 14, Ohio
"RINGS and SHAPES Since 1921"

If you write maker identify as IEN - 9666

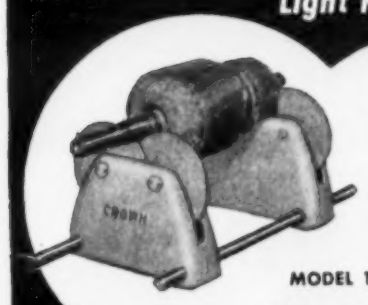
A GRINDING AND POLISHING UNIT!

As shown here, the 6-72 Vonnegut Abrasive Belt Unit is set up as a *lathe attachment* for cylindrical grinding and polishing. The same basic unit can be used as a *floor stand* and also as a *swing machine.* But that's not all—it has proved its value as a grinding and polishing unit for special machines, and as an attachment for other machines. There is the possibility that it can be used for an entirely new application in *your* plant. If you find that possibility, write us about it—we'll be glad to help you work out the details. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN - 9667

Now faster, more accurate balancing of ARMATURES—FANS—Light Revolving Parts



the New CROWN Supersensitive BALANCING WAYS

MODEL 1105

Show up instantly the slightest imbalance in the smallest armatures. Supersensitive, pivot-type bearings and four free-turning discs practically eliminate friction drag. No set up or leveling. Portable. Loads up to 35 lbs. and 10" swing.

- SENSITIVE to .006 oz.-in.
- ENDS . . . Slow Trial and Error
- NO CENTERING NEEDED

$48.00 F.O.B. Woodstock, Ill. State or local sales tax extra

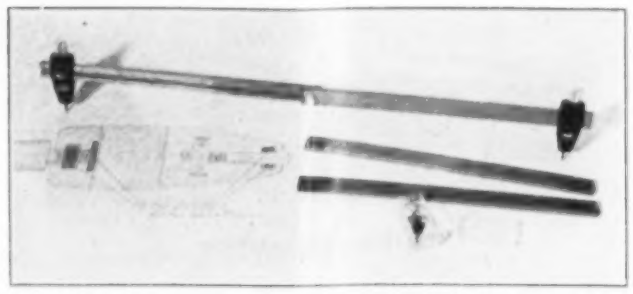
USE THIS HANDY COUPON

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam Street, Woodstock, Illinois
☐ Please ship _____ CROWN Balancing Ways, Model 1105 @ $48.00, F.O.B., Woodstock, Illinois.
☐ Please send catalog data only, now.
Name _____
Company _____
Our Purchase Order No. _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 9668

DRAFTING . . Beam compass in four sections, to 72 inch diameter

Source: FERANCE CONSTRUCTION CO.
P. O. Box 257, Penfield, N. Y.



Fits in drawer or brief case

The beam in this new compass is made of wood for light weight and stiffness. It is in four sections that lock rigidly together. The slide heads are plastic with wear inserts made of metal. Knurled thumb rolls are rotated for radius adjustment between the divider points. The parts are packaged in a cardboard box measuring 10 by 3½ by 1 inch. Weight of the assembled compass is 3 ounces. List price is about $7.

If you write maker identify as IEN - 9669

LUBRICATING . . Clear liquid stops work sticking in plastic molds

Source: CHEMICAL DEVELOPMENT CORP.
10 Endicott St., Danvers, Mass.

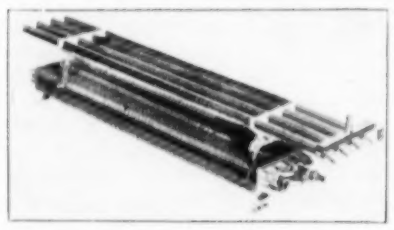
List price is $5 per gal. in drums

Brushing, spray or wiping serves to apply the new CD Mold Release B to molds being used for phenolic and melamine products. The clear clean liquid dries quickly so the mold can be closed without delay. The lubricant will not discolor colored plastic products. A spray atomizer is available for hand use. Packaging is in quarts to 55-gal. drums.

If you write maker identify as IEN - 9670

REFRIGERATING . . Evaporator coil and drip pan for use in show cases

Source: TENNEY ENGINEERING CO.
24-28 Avenue B, Newark 5, N. J.



Junior sizes

Tenneyaire, Jr., is a new assembly of refrigeration coil and drip pan for "low side" refrigerating equipment. Construction is in aluminum. Each assembly is equipped with adjustable spring hangers for quick installation and to assist in cleaning. Standard coil and pan combinations are made up for 4 to 12 ft. display cases. Coils are made with 6, 8 or 10 tubes. List price for the coil and pan, to apply in a display case, ranges from about $44 for a 6-tube coil to fit a 4-ft. case to $175 for a 10-tube coil to apply in a 12-ft. case.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9671

Drill More Holes Per Hour In ANY Pattern . . . On ANY Drill Press

with a Adjustable MULTI-DRILL

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800% . . . save time, cut costs. MULTI-DRILLS make *any* drill press produce *more.* Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility . . . wider application. Handles any hole pattern within 9" circle; centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model 900

DRILLS ANY HOLE PATTERN

See your Commander Distributor for complete details. Write for the NEW Commander Full Line Catalog No. 851.

COMMANDER MFG. CO.
4219 W. Kinzie St. • Chicago 24, Illinois
Product of Commander . . . Builder of Production Tools

If you write maker identify as IEN - 9672

It's for You!

HOW TO
★ Save Time
★ Save Floor Space
★ Reduce Handling Costs

all in this FREE BULLETIN

On-the-job photos demonstrate the many advantages of the Nutting Jack and Skid System. It is easy and inexpensive to install — and it is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

SEND FOR YOUR COPY OF BULLETIN 48-JS NOW

Export Sales Representative Scheel International Inc.
4237 North Lincoln Avenue • Chicago 18, Ill.

SINCE 1891 Nutting TRUCK AND CASTER CO.
2014 DIVISION ST., W., FARIBAULT, MINN.

If you write maker identify as IEN - 9673

WATERSPHERE FOR MODERN WATER STORAGE

The Watersphere is an efficient method of supplying an independent industrial water supply. Modern and completely functional, it provides dependable service twenty-four hours a day.

Waterspheres are built in capacities from 25,000 to 250,000 gals. Write for estimating figures, stating capacity required, height to bottom and location.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 9674

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain as 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 9675

HERE IS A COMPACT DURABLE CHEMICAL TRANSFER PUMP FOR HANDLING PROCESS LIQUIDS

HIGH QUALITY

EASILY SERVICED

PEERLESS TYPE CTB PUMP

PEERLESS PUMPS

Liquid End Made of Type #20 Stainless Steel Alloy

Handles corrosive and abrasive liquids at moderate temperatures and pressures. Write today for Peerless pump Bulletin No. B-1606. Profusely illustrated with pump views, sectional drawings, elevations and dimensions. Contains complete head-capacity data and details of Peerless construction.

TYPE CTB CHARACTERISTICS

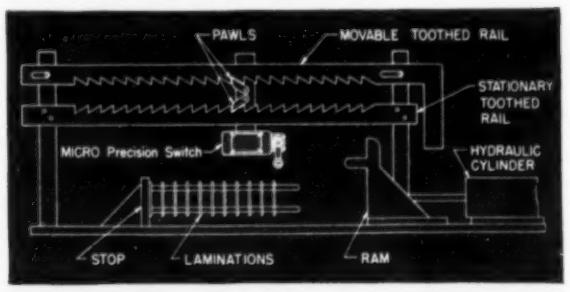
HEADS: 10-140 ft.
CAPACITIES: 10-250 gpm
HP RANGE: 1-10 hp
LIQUID TEMPERATURE: up to 250° F

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 9676

MICRO heavy duty limit switch makes accurate coil building an automatic job



● Spacing of laminations is done automatically on this coil building machine by use of a MICRO heavy duty limit switch.

1 The ram pushes laminations on tubes until contact is made with the limit switch.

2 When the switch is operated it trips a four-way solenoid valve which reverses the flow of oil in a hydraulic valve, forcing the ram to return.

3 When the ram reaches the end of its return travel an arm on the ram causes the switch assembly to move back one notch . . . ready for the next operation.

This is another of the thousands of uses plant engineers and maintenance men are making of MICRO switches as limits, safeties and interlocks on every type of plant equipment. It is easy to make machinery safer and more productive through the use of MICRO switches. There is an authorized MICRO distributor near you with a wide variety of switches to meet your specific needs. Look in your classified telephone directory under "Switches, Electric."

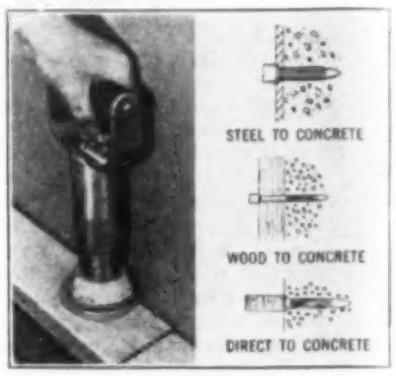
MICRO
MAKERS OF PRECISION SWITCHES
FREEPORT, ILLINOIS

A DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

If you write maker identify as IEN - 9678

FASTENING . . Steel anchor studs driven by cartridge in portable tool

Source: VELOCITY POWER TOOL CO.
201 N. Braddock Ave., Pittsburgh 8, Pa.



Bulletin TA-18

New shield is now available for permanent assembly on the barrel nose of the company's cartridge-powered stud driver, previously described IEN-5552-51. The shield stops flying particles, due to splintering or spalling, when the stud is driven. It is designed so a portion can be repositioned for studs to be driven close to an obstruction.

Interchangeable tool barrels take ¼ and ⅜-in. studs and employ .32 and .44-caliber cartridges integral with the stud. Loads range from light to heavy. The worker loads, positions and fires to drive a selected stud. A spring backed safety arm, inside the handle structure, must be rotated 180 deg. and held to make the firing pin operative.

If you write maker identify as IEN - 9679

LAYOUT . . Equipment templates and sectioned sheet for blue printing

Source: F. WARD HARMAN ASSOCIATES
253 New York Ave., Dept. N-2, Halesite, N. Y.

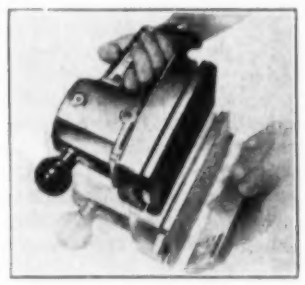
Details on request

The company announces addition of ⅛-in. scale units to its ¼-in. TemPrint flat templates, previously described IEN-2408-52. The ⅛-in. scale units can be laid out on the company's regular ¼-in. scale grid sheets for photographic reproduction of a whole plant or a department layout.

If you write maker identify as IEN - 9680

SANDING . . Portable electric tool provides motor driven reciprocation

Source: DREMEL MFG. CO.
2418-22 18th St., Racine, Wis.



Do not lubricate

Model 53 is a new motor driven straight line reciprocating tool in the company's line of portable sanders. It weighs about 5¼ lb., takes standard 3⅔ by 9-in. abrasive sheets. Operation is by a universal motor on 110-volt input.

Construction features a detachable sheet holder that can be removed and replaced quickly. An extra holder is provided so two grits of abrasive can be used interchangeably. The housing is made of aluminum. List price is about $35.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9681

IT GOES WHERE THE JOB GOES!

McDonald
KANISTER KIT

You couldn't ask for a more permanent, dependable first aid kit than this proved favorite! Weatherproof plastic roll-up is sturdy, lasts for years. But that doesn't mean it has to stay put—its simplified mounting bracket means quick installation in trucks, even on trees or posts for outdoor use! It's the easy way to keep first aid available—whenever, wherever needed!

WRITE FOR BULLETIN AND PRICES

Mounts Anywhere!

B·F·McDonald COMPANY
Manufacturers & Distributors of Industrial Safety Clothing & Equipment

5721 West 96th St., Los Angeles 45—Other Offices in San Francisco and Houston

If you write maker identify as IEN - 9682

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, *President*
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 9683

BRADY QUIK-LABEL PIPE MARKERS

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy, Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR *Free* SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W.H. BRADY COMPANY
734 W. Glendale Ave., Milwaukee 12, Wis.

If you write maker identify as IEN - 9684

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST
in addition to stopping drip and keeping floors dry.

ANYONE CAN APPLY
Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls, ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

☐ SEND NoDRIP HANDBOOK
NAME
COMPANY
ADDRESS
CITY STATE

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN - 9685

THE CAMBRIDGE

INDUSTRIAL MODEL
DIRECT READING

pH METER

- Operated from any AC outlet
- Completely portable. Weighs only 10 lbs. Electrodes are integral parts of the instrument.
- Accurate to .10 pH.
- Shielded glass electrodes permit use of electrodes at any distance from the instrument.
- May be used on a bench or wall mounted.
- Self contained in one metal case including electrodes and buffer solutions.
- Extremely stable.
- Automatic temperature compensation.

Send for bulletin 910-NA.

Also available: Electron-Ray Research Model accurate to .02 pH Laboratory Model accurate to .05 pH and Single- and Multi-point recorders.

CAMBRIDGE INSTRUMENT CO., INC.
3710 GRAND CENTRAL TERMINAL NEW YORK 17, N. Y.
Pioneer Manufacturers of
PRECISION INSTRUMENTS

If you write maker identify as IEN - 9686

THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio
IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!
sales offices and distributors in principal cities

If you write maker identify as IEN - 9687

FIND OUT
About The Hand Truck Designed for YOUR Package

Find Out About American's complete line of Hand Trucks.
Find Out About American's "Designed-In" balance.
Find Out About American's Lifetime construction.
Find Out About American's Steelite® Industrial Wheels.
Find Out All About American Today—clip and mail the coupon Now!

THE AMERICAN PULLEY COMPANY
4240 Wissahickon Ave., Phila. 29, Pa.

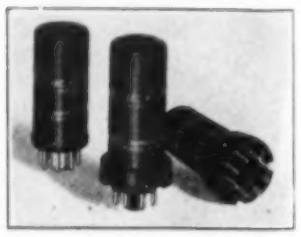
Complete line of Pressed-Steel Hand Trucks
•
Barrel Cradles
•
Steelite® Industrial Wheels

Gentlemen:
Please send me the complete story on American Pressed-Steel Hand Trucks.
Name _____
Firm Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 9688

RELAY . . Factory sealed design, gold or platinum-rhodium contacts

Source: STEVENS-ARNOLD INC.
20-24 Elkins St., South Boston 27, Mass.



Catalog 337

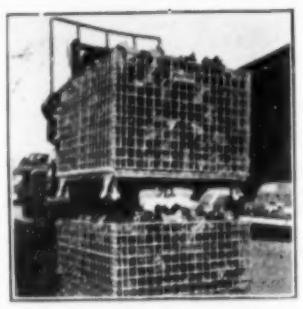
Normally open contacts open in 0.1 millisecond and normally closed contacts re-close for firm contact in 1 millisecond in this new line of factory sealed ultra high speed relays. The line is available with gold contacts to cover a current range to ¼ amp. at 0 to 110-volt dc. and with platinum-rhodium contacts for current to ½ amp. on 10 to 110-volt dc. as requirements demand.

The relay mounts in any position. It is available in one type for use at room temperature and another for a temperature range from minus 65 to plus 85 deg. C. Mounting height is about 2¼ inches. Typical applications include computers, business machines, high speed telegraphy, overload protection, carrier-current switching, automatic telephone exchanges.

If you write maker identify as IEN - 9689

HANDLING . . Collapsible wire box is assembled on steel pallet type base

Source: UNION STEEL PRODUCTS CO.
405 Pine St., Albion, Mich.

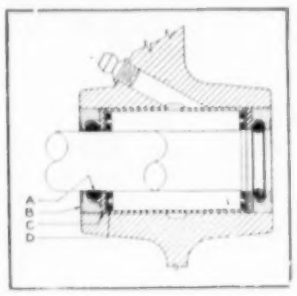


Empties fold flat

Hi-Lode designates new design of the Palletainer wire box, previously described IEN-6401-51. The new design eliminates center legs and braces from the pallet base so loads can be heaped above the top of the box and still not interfere with secure stacking. The corner legs are made of malleable iron. The new base frame is made of interlocked U-channel beams for rigidity and solid stacking. Load ratings are 1, 2 and 3 ton. The 2-ton unit measures 48 by 48 by 24 in. and is made of 8-gage steel wire.

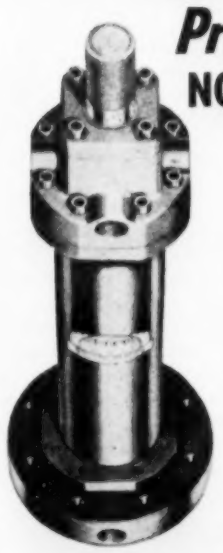
If you write maker identify as IEN - 9690

Casters and wheels mounted on a new sealed bearing retain factory placed lubricant, require no lubricating attention in service and dirt is kept out. The bearing is made by Bassick Company, 439 Howard Ave., Bridgeport 2, Conn., for its own production of casters and mounted wheels. Neoprene ring A is tight on the stationary axle and does not turn. An exterior washer B, made of powdered metal, is press fitted in the wheel hub and rotates with it. The steel bearing retainer C also rotates at the end of the roller bearing cage D.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9691



Proved in Service...
NOPAK SERIES 1500 High Pressure Hydraulic Cylinders

The successful design, construction and application of high-pressure hydraulic cylinders, under a wide variety of working conditions, is the result of specialized knowledge based on years of experience in the field of high pressure hydraulics, carefully selected materials, special skills and fine workmanship.

Reports from users indicate that NOPAK Series 1500 Hydraulic Cylinders have established new standards of design, precision, construction and performance in the high pressure field. They have been "Proved in Service".

NOPAK Series 1500 High Pressure Hydraulic Cylinders are available in 5 Standard Mountings, in diameters from 1½" to 8", in Adjustable Cushion or Non-Cushion Types.

GALLAND-HENNING NOPAK DIVISION
2760 S. 31st St., Milwaukee 46, Wis.

Refer to Sweet's File for Product Designers or write for Bulletins HC-1 and SW-1.
•
Representatives in Principal Cities
•

NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

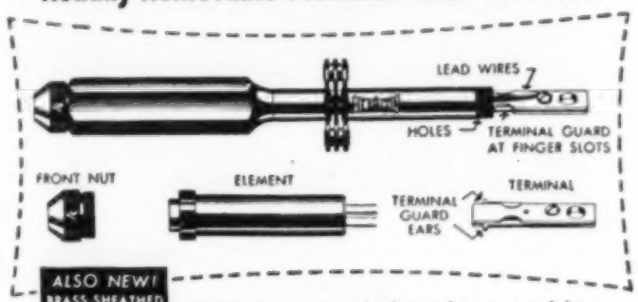
A 7499-1/9-A

If you write maker identify as IEN - 9692

NOW! CHANGE SOLDERING IRON ELEMENTS *IN A JIFFY!*
—with HEXACON

*Patent Applied For

Readily Removable Terminal* does the trick!



ALSO NEW! BRASS-SHEATHED ELEMENTS Easier to Replace—Better Protection

Write for catalog showing 40 industrial soldering irons of every type and size.

Quick-change terminal can be removed in a second or two, permitting replacement of element in a fraction of the usual time. By simply depressing terminal guard at the finger slots, the terminal comes out in a jiffy – no longer necessary to fish element lead wires around terminal.

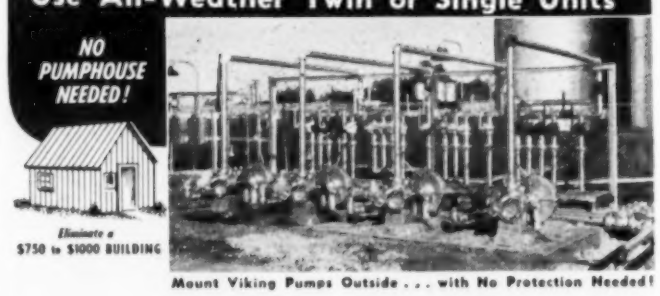
HEXACON — Industry's No. 1 Soldering Iron

HEXACON ELECTRIC COMPANY
155 W. CLAY AVE., ROSELLE PARK, NEW JERSEY

If you write maker identify as IEN - 9693

If you write maker identify as IEN - 9694

SAVE *with* VIKING PUMPS
Use All-Weather Twin or Single Units



Mount Viking Pumps Outside . . . with No Protection Needed!

Either winter or summer, no protection is needed for Viking all-weather single or twin units.

Made for pumping all types of petroleum and chemical products from the very lightest to the most viscous.

Outdoor units add safety to the pumping job as well. No fumes to collect.

Neater and handier to use. No cramped quarters creating hazardous and unsightly conditions. Makes possible easier and less costly piping arrangements.

In every way you save with Viking All-Weather pumps.

VIKING AN HONORED NAME IN PUMPING

Ask for bulletins B400F and SP223CF today.

See Our Catalog in SWEET'S

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 9695

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants

How it works to—

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Procedure readily adapted to control of gages, tool kits, and unusual requirements

Write for your copy today to:

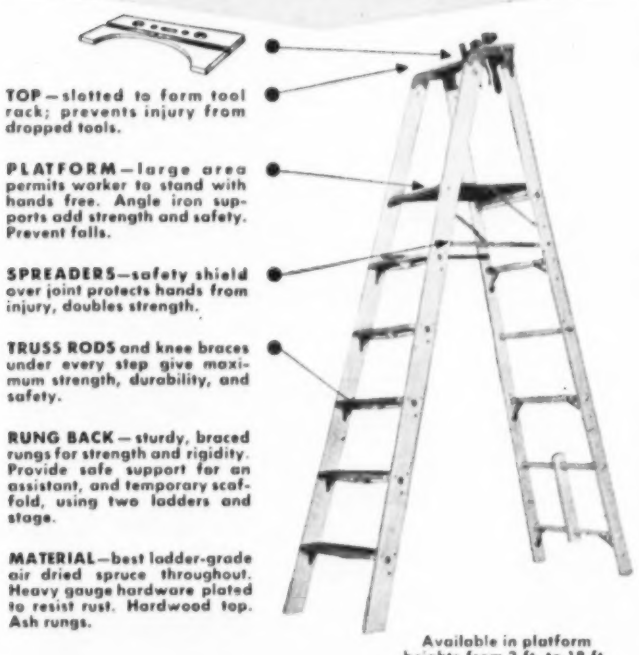
THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS

PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as IEN - 9696

Prevent Accidents... with the SAFEST STEP LADDER made...



TOP—slotted to form tool rack; prevents injury from dropped tools.

PLATFORM—large area permits worker to stand with hands free. Angle iron supports add strength and safety. Prevent falls.

SPREADERS—safety shield over joint protects hands from injury, doubles strength.

TRUSS RODS and knee braces under every step give maximum strength, durability, and safety.

RUNG BACK—sturdy, braced rungs for strength and rigidity. Provide safe support for an assistant, and temporary scaffold, using two ladders and stage.

MATERIAL—best ladder-grade air dried spruce throughout. Heavy gauge hardware plated to resist rust. Hardwood top. Ash rungs.

Available in platform heights from 3 ft. to 18 ft.

GOLD MEDAL SAFETY PLATFORM LADDER

Here is a ladder that will cut accidents in your plant as no other ladder can. That's because it's the *safest step ladder ever made.* It speeds work too—the 14" x 19" platform builds confidence, enables men to work in any direction safely; the rung back supports a helper.

Tested and approved by Underwriters' Laboratories, Inc. Conforms to ASA and all local safety codes.

"GOLD MEDAL" LADDERS FOR EVERY PURPOSE

Single, Step and Extension ladders of all types and sizes. Wood or magnesium. Highest quality for long life and incomparable safety.

FOR FULL INFORMATION WRITE TODAY FOR CATALOG L-71.

GOLD MEDAL LADDERS SCAFFOLDING

for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street, Dept. IEN, Long Island City 1, N. Y.

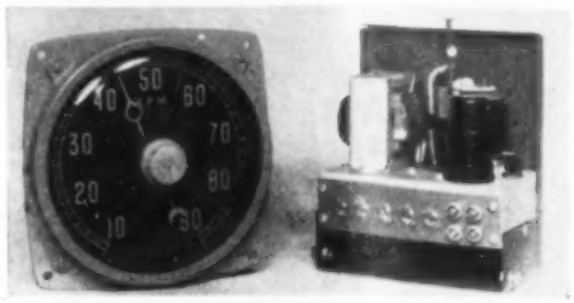
See Your Telephone Directory for Nearest "Gold Medal" Distributor

Branches in All Principal Cities

If you write maker identify as IEN - 9698

CONTROL.. Tachometer, contacts and relay to govern speed or process

Source: JONES MOTROLA CORP.
104 Noble St., Stamford, Conn.



Specified overall speed range

Speed monitor is a new assembly of mechanically operated tachometer, adjustable limit contact fingers and a relay to open and close a circuit for signal or control application. The tachometer pointer serves as one side of the relay actuating circuit. The two adjustable contact fingers constitute the other side for minimum and maximum limits in a given speed range.

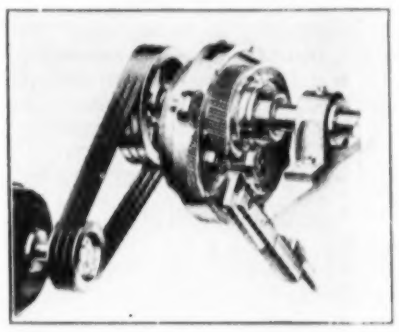
This actuating circuit operates as a single-pole double-throw switch rating to 3 microamperes. The relay rates 350 watts in the 110-volt single-phase ac. control circuit. The relay also is available for operation on 35 or 70-volt dc.

Drive for the tachometer connects to the equipment to be controlled by a flexible shaft and suitable gearing to hold speed within predetermined limits, to open and close motor operated valves, to shut down centrifugal equipment at a maximum speed, to open a motor circuit if the drive becomes overloaded and slows down dangerously, to regulate temperatures in mixtures by speeding or slowing the mixing equipment.

If you write maker identify as IEN - 9699

DRIVE.. Speed reducer designed to mount on a driven shaft

Source: AMERICAN PULLEY CO.
4244 Wissahickon Ave., Philadelphia 29, Pa.



V-belts to motor

New ratio, 13 to 1, has been added to the Shaft-King line of reducers, previously described IEN-1050 in a 20 to 1 ratio. Application can be made on shafts to 3 13/16 inches. The assembly employs two pair of helical gears and pinions with flame-hardened teeth. Lubrication is by splash inside the sealed housing.

Mounting is on ball and roller bearings. Tapered split bushings mount the reducer on the driven shaft. An overload release design of torque arm can be specified. A backstop to prevent reverse rotation also is available. Seven sizes are included in the new line for speed range between 11 and 154 rpm.

Input ranges from fractional to 42.8 hp. with overall dimensions from about 9¼ to 7¾ in. in diameter and 23½ to 19½ in. in length, including the shaft. Weight is 35 to 490 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9700

PAGE FENCE -Since 1883

• AMERICA'S FIRST WIRE FENCE •

EVERY STEP IS QUALITY CONTROLLED— FROM RAW METAL TO THE ERECTED FENCE

• Page *Chain Link* Fence, pioneered by PAGE and produced only by PAGE, offers reliable protection against hazards which threaten both property and persons.

YOUR CHOICE OF THREE SUPERIOR METALS is assurance that your fence will best meet your needs. Choose heavily-galvanized Copper Bearing Steel, or long-lasting Stainless Steel, or corrosion-resisting Aluminum. Interlocking wires are woven to form a strong, uniformly square mesh.

EIGHT BASIC STYLES, varied by choice of metals, wire gauges, heights, types of gates, posts and post tops, and top rails. Tension and fabric bands not removable from outside. Gate frames welded at joints.

IT'S TIME TO THINK, AND ACT. Page Fence is expertly erected by technically trained firms conveniently located throughout the country. For illustrated PAGE data and name of nearest firm . . .

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN - 9701

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—
end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two-sizes—tapered or straight sides.

IMMEDIATE DELIVERY

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM

"Stacked and Still Accessible"

If you write maker identify as IEN - 9702

Any way you look at it... **MODINE**

Stainless Steel GAS UNIT HEATER

offers you the best in modern heating

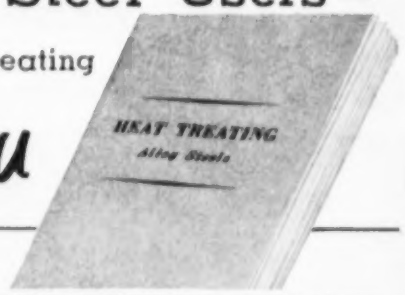
Only Modine builds gas-fired unit heaters with both STAINLESS STEEL heat exchangers and burners! That's why only Modine combines so many heating extras in a single unit. Longer life, lighter weight, compactness, faster response, balanced heating, no fuel handling, summer cooling. You get them all with Modine. *Write for free copy of Bulletin today!* Modine Mfg. Co., 1503 Dekoven Avenue, Racine, Wisconsin.

Modine UNIT HEATERS

If you write maker identify as IEN - 9703

Alloy Steel Users—

this heat treating handbook is for *you*



Jam-packed with valuable information on heat treating, this new 55-page handbook has been specially prepared for those working with alloy steels.

It contains all salient data for normalizing, annealing, carburizing, flame hardening and other heat treating methods. Includes data and charts on critical points, nitriding depths, mechanical properties and other essential information. You'll find it invaluable for reference and well worth adding to your personal library. For a complimentary copy send your IENquiry today or write Frasse.

Frasse alloy steel stocks include:

Rounds	3140	4340
Hexagons	4130	8620
Sheets	4142	TS 8620
Plates	4142 H.T.	8630
Tubes	TS 4142	8740
	TS 4142 H.T.	

Aircraft grades conform to Gov't "specs"

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

Hartford • Philadelphia • Buffalo • Syracuse

If you write maker identify as IEN - 9704

JOHNSON Self-Lubricating Ledaloyl bearings from stock

● A large selection of these powder metallurgy sleeve bearings is available in any quantity from Johnson distributors' stocks . . . plain, flanged and self-aligning styles. They are extremely low in cost, as they are molded to shape from powdered pre-cast bronze and require no machining. Ledaloyl bearings are impregnated with oil . . . therefore, self-lubricating. Ideal for hard-to-lubricate places. Write for catalog.

JOHNSON BRONZE COMPANY
476 S. Mill Street, New Castle, Pennsylvania

If you write maker identify as IEN - 9705

Get absolutely OIL-FREE AIR with GAST rotary OIL-LESS AIR PUMPS

Below — Oil-less 3040, end plate removed. From 17 to 24 C.F.M

Oil-less Model 1550 — 8 to 10.5 C.F.M.

SEE OUR CATALOG in SWEET'S FILE

Write for new Data Sheet on Oil-less Pumps, showing three types and rating tables.

THEY RUN ENTIRELY *without oil* in pumping chamber. Carbon rotor vanes lubricate themselves — through thousands of hours' use. Ball bearings grease-sealed for life. You can forget oiling problems!

DELIVERS ABSOLUTELY OIL-FREE AIR. Your product or material can't be contaminated with oil droplets.

FOR BOTH VACUUM AND PRESSURE, Gast Oil-less Models are precision-built for dependable high performance. Sizes from 3.5 to 24 C.F.M., 3 to 10 lbs. pressure, 10 to 20 in. vacuum.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 CFM) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Ashley St., Benton Harbor, Mich.

If you write maker identify as IEN - 9706

SAVE Maintenance AND Towel Costs WITH Sani-Dri ELECTRIC Hand or Hair Dryers

Save valuable maintenance time and eliminate continuing towel expense. New, improved features make Sani-Dri faster drying . . . provide quick, automatic hand or hair drying service 24 hours a day year after year! Sani-Dri is a permanent solution to washroom sanitation and drying problems—and SAVES UP to 85% of WASHROOM COSTS!

All Sani-Dri Electric Dryers are GUARANTEED, and have carried the Underwriter's Seal of Approval for over 18 years!

SEND FOR NEW BROCHURE showing all models and installation pictures.

Distributors in Principal Cities
THE CHICAGO HARDWARE FOUNDRY CO.
• "Dependable Since 1897"
3483 Commonwealth Ave. • North Chicago, Ill.

If you write maker identify as IEN - 9707

CLEANING . . Floor sweeping machine, engine drive, 36 in. brush, to 6 mph.

Source: G. H. TENNANT CO.
2574 N. 2nd St., Minneapolis 11, Minn.

Bulletin 85-2

The operator rides this new Tennant-75 machine. He selects forward or reverse movement by rocking a foot pedal. He controls travel at 2 to 6 mph. The main 36-in. brush operates in connection with a vacuum blower and dust bag to pick up litter. A ratchet type lever is operated to tilt the loaded dirt hopper and dump loads weighing to 700 pounds. The action takes less than a minute.

A side brush increases width capacity to 4 feet. It sweeps dirt into the path of the main brush, cleans a floor up to the wall or curb line. Turning is in a 5-ft. radius. Mounting is on 12-in. wheels. The tubular steel frame is welded and reinforced for rough service. Clearance above the floor permits climbing and descending ramps without drag. The engine rates 7.3 hp. and is equipped with a built-in generator, pushbutton starter and a standard storage battery.

If you write maker identify as IEN - 9708

WOODWORKING . . Portable saw, universal motor, takes 8¼ in. blade

Source: SKIL CORPORATION
5039 Elston Ave., Chicago 30, Ill.

Also scores masonry

Model 698 is a new portable electric saw weighing 14¼ pounds. It will cut through 2-in. dressed lumber at 45 deg. or 3 in. when set square. Operation is at 5,600 rpm. Cut depth is adjustable between $\frac{1}{16}$ and 2⅞ inches and for any cutting angle between square and 45 degrees. The universal motor operates on 110 volts.

Construction employs ball and needle roller bearings and an overhead type handle for one-hand control. The assembly includes a built in rip fence and telescoping blade guard with a retracting handle. The upper blade guard directs saw dust away from the operator and keeps the cut line clean.

If you write maker identify as IEN - 9709

A company required more floor space in its stock room but could expand upward only. It solved the problem by purchasing a supply of Tri-Lok steel grating and the required structural supports to build a second floor. The grating lets light through to the lower area. It supports new storage racks. Dravo Corporation, Liberty and Fifth Ave., Pittsburgh 22, Pa., supplied the grating.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9710

BETTCHER MANUFACTURING CORPORATION . . .

says PHILLIPS degreasing
★ speeds up production
★ cuts overall production costs
★ gives more efficient cleaning

Phillips Model 84 degreaser gives fast, efficient cleaning in the Bettcher plant

PHILLIPS VAPOR DEGREASERS

- Higher operating temperature, greater capacity.
- No rinse, blast or drying operations.
- Power consumption only 70% in full production.
- Sizes, types for every need.
- Accurate, economical, safe solvent control.

Bettcher Manufacturing Corporation of Cleveland, Ohio has found that Phillips degreasing is vitally important in keeping costs low. Two Phillips batch type degreasers plus Phillsolv (stabilized and inhibited) are used to give fast, efficient cleaning of conversion heater parts. As a result, cleaning costs have been reduced 50% by this modern Phillips method. Parts are cleaner too, making possible further savings in finishing.

This is how the Phillips system helps get more profitable production. No matter what your own cleaning needs are, there is a Phillips unit to fit. Check with Phillips today for metal cleaning that cuts costs and improves cleaning at the same time.

SEND FOR THIS CATALOG

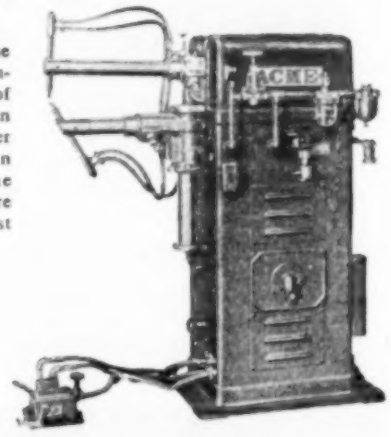
Complete information kit. Details on sizes, styles, installation. Illustrated bulletin and vapor degreasing handbook.

Phillips MANUFACTURING COMPANY
3461 Touhy Avenue • Chicago 45, Illinois
Engineered Metal Cleaning Equipment

If you write maker identify as IEN - 9711

ACME "Hot Spot" WELDERS

Here is a complete line of resistance welders, considered the "Cadillac" of its field—at a price you can afford, and backed by over 35 years of service in plants throughout the world. Write for literature or name of your nearest distributor.



- SPOT
- PRESS
- PROJECTION
- SEAM
- PORTABLE
- SPECIALS

ACME ELECTRIC WELDER CO.
2622 FRUITLAND AVE., LOS ANGELES 58, CALIF.

If you write maker identify as IEN - 9712

New "PULL-GEAR" SPEED-REDUCING PULLEY Increases Drill Press Capacity

NEW MODEL

Provides Correct Speed and Power to Drill Up to 1⅜" with ½ H. P. Motor.

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 45 to 3000 RPM. Made in 3 motor shaft sizes: ½"—⅝"—¾". Write for literature.

Some Territories Open to Jobbers

THE PULL-GEAR CO. — WRITE FOR LITERATURE
4118 E. 8 Mile Road Detroit 34, Mich.

If you write maker identify as IEN - 9713

CUT COSTS WITH MULTIPLE BENDING

Whether you're bending pipe, tubes, reinforcing bars or structural shapes, you can greatly increase your bending production by multiple die bending.

Shown here is our Model A-5 BENDING MACHINE, tooled for bending 3 different radii without changing the set-up. In order to make multiple bending cost no more per die than single bending, individual dies are merely stacked on the die spindle and a shoe of the proper width permits the same degree to be bent without changing the automatic reset switch. The MODEL A-5 will bend pipe up to and including 2" standard weight pipe.

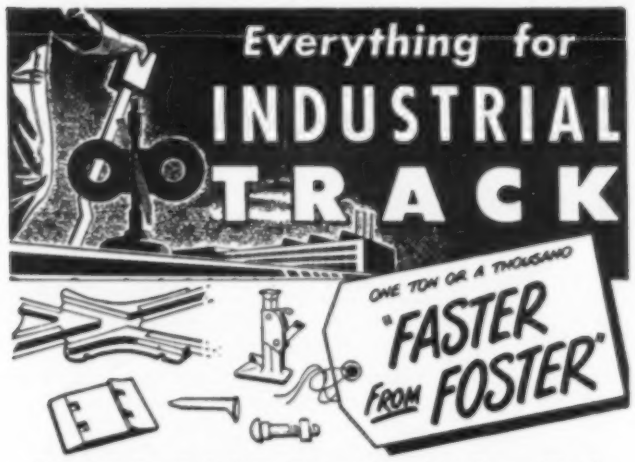
Redesigned and greatly improved, the Model A-5 still sells for only $1975. F.O.B. factory, U. S. Funds.

Smaller and larger machines available.

Write for detailed and descriptive folder.

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St., Dept. 7, Phila. 40, Pa., U. S. A.

If you write maker identify as IEN - 9714



Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-9.

L.B. FOSTER CO.

CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 9715

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 9717

PAINTING . . Spray gun powered by carbon dioxide cartridge

Source: SULLIVAN-BECKER CO.
6703-7 14th Ave., Kenosha, Wis.

No hose lines

A cartridge of carbon dioxide in the handle of this new Model 53 spray gun is sufficient to deliver all of the paint in the gun's 21-oz. container. The new unit represents further development of the gun previously described IEN-7504-49. It is operated by depressing a valve trigger.

The gun also is available with an attachment that fits into the handle for connection to a shop air line. The spray head is aluminum. The container is made of steel. Insert parts are brass and stainless steel.

If you write maker identify as IEN - 9718

SEALING . . Silicone rubber in strips, enclosed in Teflon or Kel-F

Source: CONNECTICUT HARD RUBBER CO.
405-9 East St., New Haven 9, Conn.

Fluorlastic Bulletin upon request

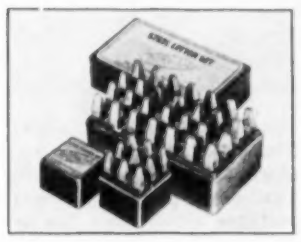
Fluorlastic designates a new composite gasket material for door seals and joints where cushioning and sealing are required. Strip-type gaskets, employing the silicone rubber core and either Teflon or Kel-F envelopes, are available in lengths to 96 in. and width to 4 inches. They are suited for hoods, ducts, oven closures, where corrosive conditions are encountered. Ring forms, also available to 12 in. in outside diameter, employ Kel-F envelopes for application requiring complete immersion in corrosive substances.

Envelope thickness ranges from 0.0025 to 0.030 inch. Temperature range is from minus 65 to plus 500 deg. F. Sections include rectangular with a flange extending along one or two opposite sides, semi-circular with a flange on one or both sides of the flat base, circular without a flange. Rectangular width is ¼ to 4 in. with the flange adding ⅛ to ¼ inch. Thickness is $\frac{3}{32}$ to 1 inch. Semi-circular sections measure $\frac{1}{16}$ to 2-in. radius. Circular sections are ¼ or ½ in. in diameter.

If you write maker identify as IEN - 9719

MARKING . . Steel stamp sets, numbers and letters in plastic boxes

Source: PARKER STAMP WORKS INC.
702 Franklin Ave., Hartford 1, Conn.



In box with cover

Seventeen sizes range from $\frac{1}{32}$ to 1 in. in character height in the company's new line of plastic boxed stamp sets. Numbers are from 1 to 0 in sets of nine in which the numeral 6 is reversible to mark 9 also. There are 27 characters in the letter sets to include the characters "&" with the alphabet. Style is plain gothic.

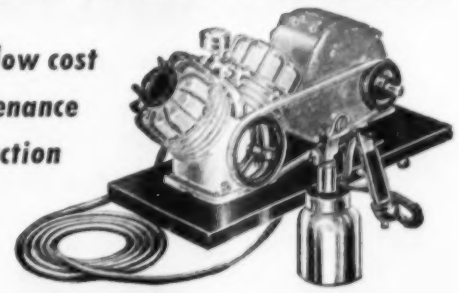
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9720

Speedy Sprayer

PORTABLE PAINT SPRAYERS

for low cost plant maintenance and production



Dozens of handy, money-saving uses for these portable SPEEDY SPRAYERS! Operate anywhere in or out of your plant beyond the reach of air lines. Rugged, powerful, sprays all materials. Or use as source of compressed air, as vacuum pump or to inflate tires, etc. Absolutely clean, oil-free air assured by proved diaphragm principle employing no oily pistons. Order SPEEDY SPRAYER from your mill supply house or write direct for free catalog.

MODEL 444—½ H.P.
Heavy duty master twin. Delivers 4 cu. ft. air per minute at 40 lbs. Operates with ½ H.P. motor or gas engine. Complete with gun, 15 ft. air hose, less motor, $56.50

MODEL 890—¼ H.P.
2 cu. ft. air per minute at 30-40 lbs. pressure, less motor, $36.50

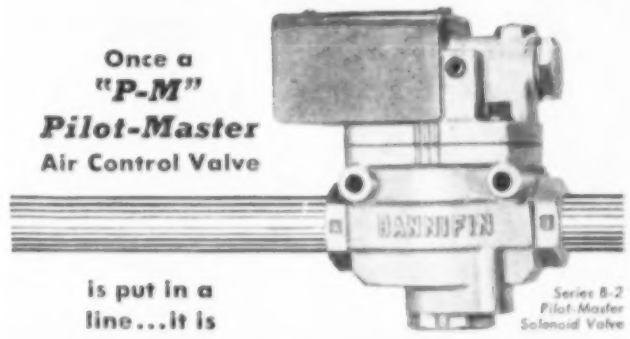
No. 77½ Utility Paint Container for above models, holds 3 gals. paint $22.00

W. R. BROWN CORP.
2671 Normandy Ave., Chicago 35, Ill.

Specialists in Portable Sprayers for over 20 years

If you write maker identify as IEN - 9721

Once a "P-M" *Pilot-Master* Air Control Valve



Series 8-2 Pilot-Master Solenoid Valve

is put in a line...it is

never removed!

That's right: You use a pipe wrench only once...then never touch the piping again. To renew this valve you simply replace a cartridge that contains all the working parts. The valve body—a simple, sturdy housing—need never be removed from the line. Think of what this can mean to you in reduced down time and lower maintenance costs! Plan now to standardize on Hannifin Pilot-Master Valves.

- 2-way, 3-way and 4-way
- All sizes ¼" to 1¼"
- Pressures from 15 to 150 P.S.I.

WRITE FOR BULLETIN NO. 231

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.
AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 9722

IT'S SUPERSAFE!

THE *New* IDEAL Voltage Tester

Every feature thousands of electrical men said they wanted including:

New...Handier center prod mount
Prod storage shields tips
Double strength seamless plastic case--no surface metal

PLUS "DOUBLE PROTECTION" . . . a solenoid, calibrated indicator, AND a neon test lamp, each independent of the other. YOU CAN'T FAIL TO DETECT VOLTAGE! . . . Also many other time-proven IDEAL advantages.

Tests 110 to 550 volts AC—110 to 600 volts DC

SOLD THROUGH LEADING DISTRIBUTORS. SEE IT NOW

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send me full catalog information on new IDEAL Voltage Tester.
Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 9723

SAVE on Cut-off Costs!

SHOWN—Model M equipped with bar feed

. . . with this FULLY Automatic Equipment!

- Our Models M, D and J feature simplified hydraulic controls for both full and semi-automatic operation. Minimum maintenance, maximum blade life assured!
- Top results are yours on all jobs whether high speed or regular blades are used.
- Capacities range from 9" x 18" to 24" x 24".
- Also available: Model H hinge-type, economy model (9" x 16" capacity) and a complete range of accessories.
- Send today for literature on this line-up of superior metal cutting band saws.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as IEN - 9724

New Becker Model "53" Spray Gun, specially engineered for industry, sprays protective coatings, paints, solvents, cleaners, oils, etc. *Completely portable!* Powerful CO_2 cartridge (10 for $1.00) sprays up to one 21-ounce containerful. Tank can be charged from air hose (for liquids atomizing at 120 psi), with special attachment. Rugged steel tank, machined brass and stainless inserts, cast aluminum head. See your Distributor or order direct postpaid.

SULLIVAN-BECKER CO. Dept. 193-J KENOSHA, WISC.

If you write maker identify as IEN - 9725

If you write maker identify as IEN - 9726

This illustrated folder describes the complete line of Ballymore ladders that are saving time and money and increasing capacity of storage space in business and industry. Send for your free copy today.

BALLYMORE COMPANY
WAYNE 4, PENNSYLVANIA

Name_____
Company_____
Address_____
City_____ Zone_____ State_____

If you write maker identify as IEN - 9727

CALCULATING . . Portable instrument set up, solves mathematical problems

Source: CURTA CALCULATOR CO.
3849-53 W. Madison St., Chicago 24, Ill.

Made in Switzerland

Illustrated is Model II in the company's line of portable instruments, previously described IEN-5673-52. It is a somewhat larger unit than the initial design. It will handle problems of 11 by 8 by 15 digits. Construction is in metal. Weight is 12 ounces.

Problems in addition, subtraction, multiplication, division, square and cube roots, factors, percentages, are set up on the barrel and at the two ends. Figures can be checked and rechecked on three sets of dials.

If you write maker identify as IEN - 9728

PACKAGING . . Plastic drum liner for liquids and granular materials

Source: MEHL MFG. CO.
2055-59 Reading Road, Cincinnati 2, Ohio

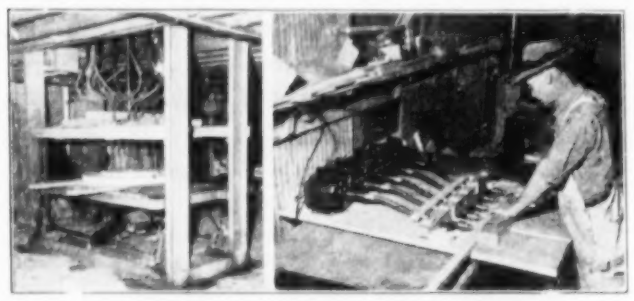
Fits into the drum

New sizes have been added to the company's line of polyethylene drum liners, previously described IEN-1404-53, for use in steel or fiber drums. The liner prevents corrosive action, assists in drum cleaning after the material has been dispensed and protects the material itself against contamination. The original nine types have been increased to fifty-one.

The circular design, with a fiber disc between two layers of polyethylene plastic, at the bottom, is now available in five sizes between 5 and 55 gal. and in several film gages between 0.0015 and 0.006 in. in thickness. The plastic is chemically inert.

If you write maker identify as IEN - 9729

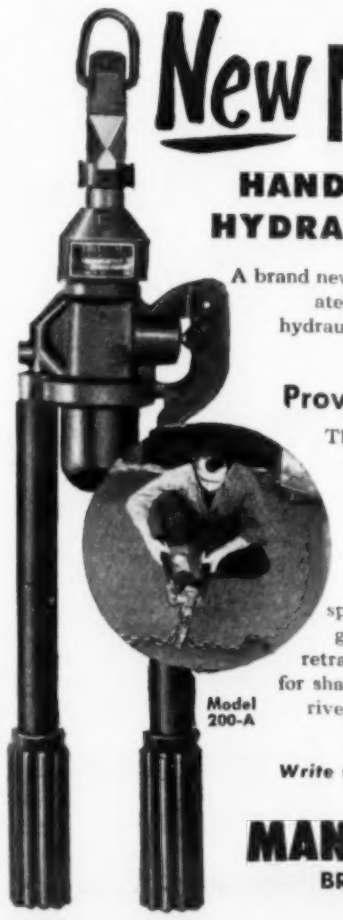
Flexible shafts, made by Stow Mfg. Co., 55-59 Shear St., Binghamton 25, N. Y., provide the connecting link between



a multiple drive and an adjustable head in two special drilling setups. One is a vertical assembly to drill holes in the flanges of wood cable reels measuring 2 to 7 ft. in diameter. The other employs five individual motors with the shafts connecting to a straight-line head for adjustment between centers. The examples are two of a good many that Stow can tell you about.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9730



New MANCO

HAND-OPERATED HYDRAULIC CUTTER

A brand new development in hand-operated cutting tools. Tremendous hydraulic cutting force produced by easy hand-pump action.

Provides 10 Tons Thrust

The powerful, yet compact and relatively lightweight Manco Hydraulic Cutter bites right through ½" reinforcing rod, chain, bolts, etc. Unique dual ratio pump affords rapid traverse for speed of cut. Twist of handle grip provides automatic blade retraction. Blades easily removed for sharpening. Can be adapted for riveting, crimping, punching, etc. Weight 15 lbs. Length 24".

Write for complete information
Dept. N-9

MANCO MFG. CO.
BRADLEY, ILLINOIS

If you write maker identify as IEN - 9731

If you have a labeling problem ordinary labels can't solve...use AVERY Kum-Kleen self-adhesive LABELS

...the tough ones are our specialty

...where other types of labels are found "wanting"...or when you need to substitute an attractive pressure-sensitive label for a costly nameplate... Avery Kum-Kleen labels are the *best* solution to your problem!

...and so are the other kind..

...where you want *faster* labeling... improved appearance...labels that won't pop, curl or peel...or those the housewife can remove without soaking or scraping...there's no substitute for an Avery Kum-Kleen label!

faster • easier • more economical

Patented Avery dispensers...manual or electric... feed die-cut *pressure-sensitive* labels off roller tape, ready to be LAID ON any clean, smooth surface. No moistening...no sticky fingers.
Where can YOU use these labels in YOUR business? Write today for free samples, case histories and prices.

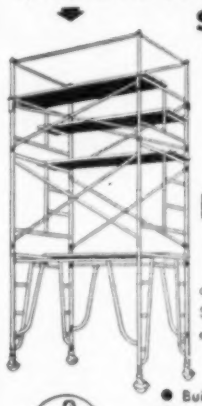
AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 So. California Ave., Monrovia, Cal. • Offices in Other Principal Cities
Originators of Pressure-Sensitive Labels

If you write maker identify as IEN - 9732

WORLD'S FASTEST SCAFFOLDING

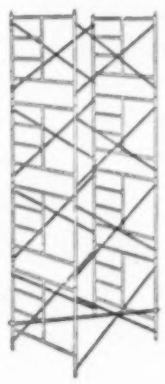
ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!



BIG WACO FEATURES!

Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.



- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor *today* for a free demonstration. Distributors in all principal U.S. and Canadian cities.

Write for free file folder

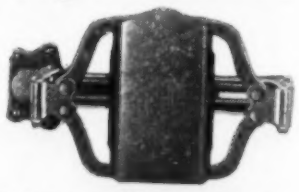
WACO MANUFACTURING COMPANY
3567 Wooddale Avenue Minneapolis 16, Minn.

Canada: ARMSON IRON WORKS, LTD. Windsor, Ontario
West Coast: WACO-MAY COMPANY Los Angeles, Calif.

If you write maker identify as IEN - 9733

Stop Slamming Doors!

KANT-SLAM Hydraulic Door Check



Closes **Stops**

Large or Small Doors, Screen Doors and Gates - Easily, Gently Smoothly
Slamming . . . Banging . . . Broken Door Glass . . . Insects . . . Drafts . . . Heat Loss

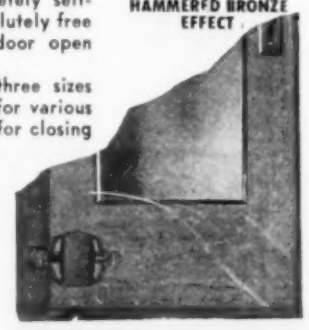
$9.95
DELIVERED

THOUSANDS IN DAILY USE IN EVERY STATE IN U. S.
SCHOOLS. HOSPITALS FACTORIES. WAREHOUSES. OFFICES. INSTITUTIONS PUBLIC BUILDINGS
ATTRACTIVE. DARK BRONZE. METALLIC LACQUER FINISH—HAMMERED BRONZE EFFECT

KANT-SLAM closes doors with efficiency of human hand. Hydraulic action—NOT an air check—piston works in oil. 3 years trouble-free service guaranteed. Price about half of other hydraulic controls.

Works any place along hinge side of door—top, middle or bottom—either right or left hand doors. KANT-SLAM is completely self-contained—door and hinges are absolutely free of any strain or pressure. Holds door open when past 90 degrees.

Only one size Check required—three sizes easily detachable springs available for various size doors. Simple screw adjustment for closing speed.

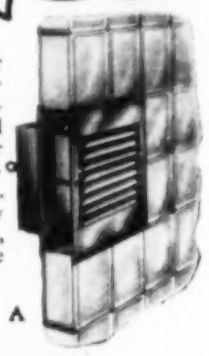


Order on 30 Days FREE TRIAL— or Write for Complete Details

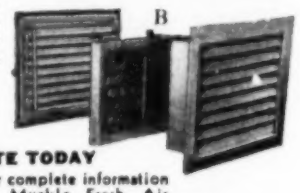
KANT-SLAM Door Check Co.
200 W. Spring St., Bloomfield, Ind.

If you write maker identify as IEN - 9734

Perk up- fresh up- with F A I- fresh air inside! Get efficiency with economy by installing MUCKLE FRESH AIR INTAKES — they'll supply fresh, filtered air to each room and condition your plant for *top* efficiency without the expense of costly distribution ducts. Muckle Intakes contain inverted v baffels to arrest direct blow through, oiled spun glass filters and adjustable closing louvers on inside.



Model A fits easily into glass block construction by removing 4 blocks. Model B fits any wall thickness. Both models have air opening of 10" x 14" and pass 1000 CFM at .0625" static air pressure.



Muckle

WRITE TODAY
For complete information on Muckle Fresh Air Intakes.

MANUFACTURING CO., OWATONNA 33, MINN.

If you write maker identify as IEN - 9735

U. S. Royalite Tote Boxes...

Your Answer to Efficient Industrial Housekeeping

Yes, the problems industry faces in keeping efficient inventories, making production lines run smoothly, keeping space-waste and weight to a minimum are solved by tough, lightweight U. S. Royalite.

In Tote Box form, this versatile thermoplastic provides factories with a *one-piece* box that is waterproof, stainproof and not affected by oils, alkalies and most acids.

And U. S. Royalite Tote Boxes are available in a variety of shapes and sizes and in a wide range of permanent colors. Send for full information on how U. S. Royalite Tote Boxes or U. S. Royalite itself can improve your products . . . cut production time and costs. Write Dept. IEN-1.

Tray for X-Raying Spark Plugs

Screw Machine Parts Tray

Check List of U. S. ROYALITE Advantages:

- ✓ Lightweight
- ✓ Tough
- ✓ Non-splintering
- ✓ Non-warping, non-corrosive
- ✓ Impervious to oils, most acids, alkalies
- ✓ Highly resistant to impact
- ✓ Waterproof, stainproof
- ✓ Easily formed on low-cost tools
- ✓ Prefinished to your specifications
- ✓ Color-permeated throughout
- ✓ Available in sheets
- ✓ Stable under changing atmospheric conditions
- ✓ Exceptional electrical insulating qualities
- ✓ Low rate of heat conductivity

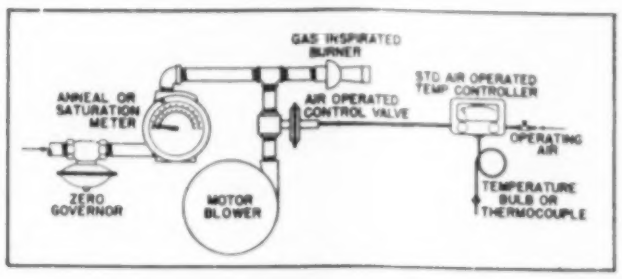
U.S. ROYALITE
TOUGH PLASTIC PRODUCTS

UNITED STATES RUBBER COMPANY
2638 North Pulaski Road, Chicago 39, Illinois

If you write maker identify as IEN - 9737

CONTROL . . Load saturation meter for heat treating, non-ferrous melting

Source: GRINDLE CORPORATION
16229-33 Turner Ave., Markham, Ill.



Basic operating diagram

Anneal meter designates a new double scale instrument for application on a gas fired furnace. It helps an operator judge the correct firing rate for a given furnace load in annealing, heat treating, normalizing, and in non-ferrous metal melting. The instrument has been made standard equipment on the company's annealing ovens. Operation is based on the fact that a loaded furnace requires progressively less fuel as it approaches a predetermined temperature control point.

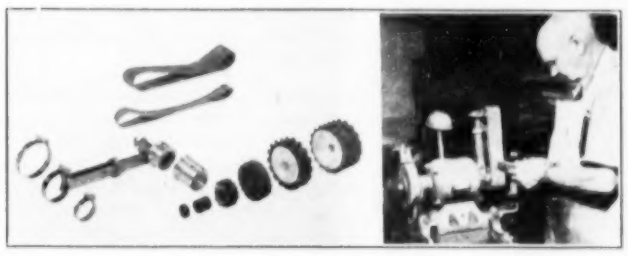
Two scales on the meter face are calibrated in cfm. of gaseous fuel and in per cent btu. input of the fuel. The btu. scale is drawn for each furnace burner, or group of burners, and is not interchangeable with others having different capacities. Calibration of the upper scale can be in cfm. of air, instead of gas when the gas is a function of the air.

Installation can be made for indication only or for recording. Either can be equipped with mercury switches to signal the saturation point, or to change the action to "hold", or turn off the burners, or initiate a cooling cycle, or operate automatic quenching equipment.

If you write maker identify as IEN - 9738

GRINDING . . Adjustable attachment applies abrasive belt on a machine

Source: CURTIS MACHINE CORP.
1302 E. 2nd St., Jamestown, N. Y.



Applies and removes quickly

Adapt-A-Belt is a new attachment to mount on a machine at a rotating spindle. It takes contact wheels of various sizes to carry an abrasive belt, as shown in the illustration. It can be employed on lathes, drilling machines, milling machines, pedestal grinders. Work can be ground at either end wheel or on the belt between the wheels.

Model A-1 takes abrasive belts to 1 in. in width and weighs 2¼ pounds. Model A-2 rates to 2 in. in width and weighs 2½ pounds. Provision is made to adjust the belt so it "tracks" correctly and also to set the tension. Belts are available in 21 to 31-in. lengths.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9739

INEXPENSIVE water heating

Heat water in small tanks by direct injection of steam with the

SARCO THERMOTON TYPE S

It combines the function of a silent steam nozzle with approximate temperature control. Prevents boiling over; shuts off automatically when no water is drawn; conserves steam.

Sizes ½" to 2", pressures to 200 psi

Ask for Bulletin 551

503

SARCO SAVES STEAM

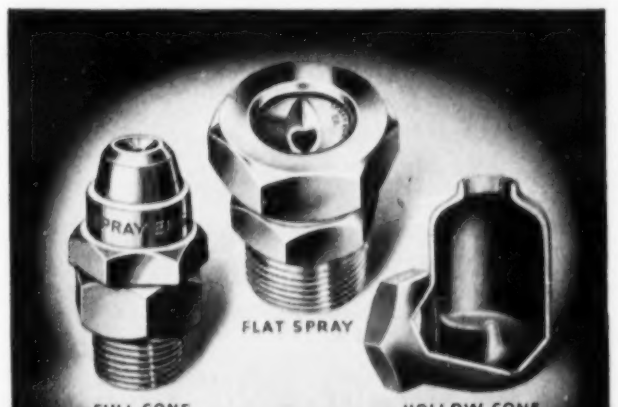
SARCO COMPANY, INC.
Empire State Bldg., New York 1, N.Y.
SARCO CANADA, LTD., TORONTO 8, ONTARIO

If you write maker identify as IEN - 9740

A major advance in fork truck design. Mercury "Yak" 430 incorporates . . . higher maximum fork elevation • increased free lift • greater speed • lighter chassis weight • shorter turning radius • simple *low pressure* hydraulic hoist system • new unit drive with quick detachable motor and self-energizing hydraulic brakes • new compensating castor type steering axle • Timken duo-grip parking brake actuated by driver's seat.

MERCURY MANUFACTURING CO.
4132 S. Halstead Street, Chicago 9, Illinois

If you write maker identify as IEN - 9741

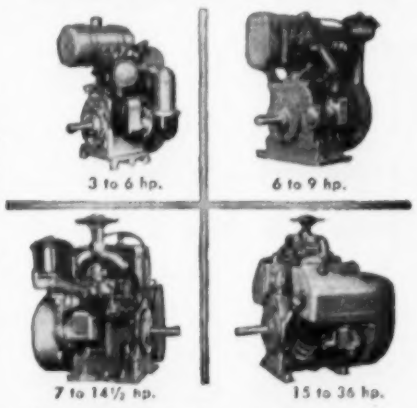


SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 9742

Most Specified... Most Used... WISCONSIN HEAVY-DUTY *Air-Cooled* ENGINES



Specified as integral power units by more than 500 original equipment manufacturers . . .

Delivering dependable, efficient power on a greater variety of service applications than all other makes of engines combined, in a 3 to 36 hp. range . . .

Supplying Most H.P. Hours of heavy-duty on-the-job power in all weather, all climates . . .

Constantly demonstrating the outstanding efficiency and trouble-free dependability of AIR-COOLING . . .

These are some of the factors worth considering in the selection of engine power for YOUR equipment. Detailed engineering data and descriptive literature on request.

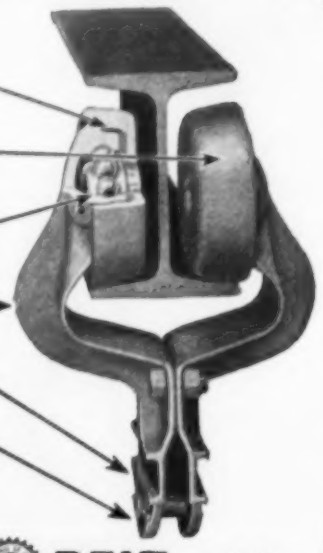
Power to Fit the Machine

Power to Fit the Job

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy-Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 9743

Important points to look for when you buy trolleys You get them all when you buy Link-Belt



Effective sealing of wheel and bracket keeps out dust and dirt.

Wheels are drop-forged, internally machined to extremely close tolerances.

Raceways are induction hardened. High load capacity is based on entire assembly — not just on bearing.

Rugged, one-piece bracket and clevis are drop-forged and heat-treated—fewer parts to maintain.

Trolley can replace other makes without disturbing chain's operating position.

Clevis pins are locked in bracket, cannot rotate. Bracket wear is minimized.

Write for Folder 2241-B.

LINK-BELT

LINK-BELT COMPANY
Dept. 21, 307 N. Michigan Ave.
CHICAGO 1, ILL.

12,384

If you write maker identify as IEN - 9744

MODERN TIME AND COST SAVERS BUILT BY... Standard GRAVITY & POWER CONVEYORS

LIGHT AND EASY TO CARRY
Put it where you need it!

LITEWATE Roller Conveyor

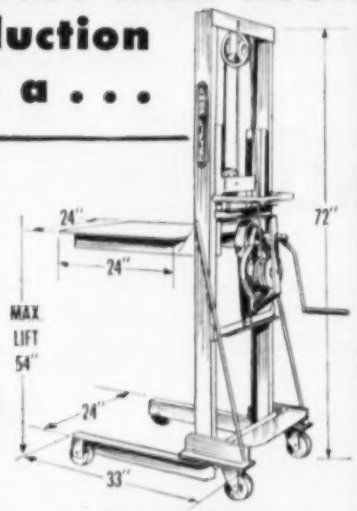
Ideal for loading and unloading. Handles commodities up to 60 lbs. — moves bags, cases, hollow bottom, narrow, cleated and irregular packages. Available in 10 ft. and 5 ft. straight sections and 90° and 45° curves. Keep LITEWATE conveyors handy in your storage and shipping rooms — carry them in your trucks. Write for LITEWATE Conveyor Bulletin — address Dept. IEN-93.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN - 9745

Cut accidents Increase man hour production with a . . .

SHOPLIFTER



Handles heavy dies from storage rack to press. Lifts barrels, boxes, loads trucks, makes a handy adjustable shop table. Automatic brake holds load at any height.

Type D —Hand operated CAP. 500 lbs. $183.60
Type DE —Electric operated CAP. 500 lbs. $412.08
Type DX—Hand operated CAP. 1000 lbs. $349.52
Type DX—Hand operated CAP. 2000 lbs. $417.52
Floor lock included. Prices net. F.O.B. Chicago

ECONOMY ENGINEERING CO.
4502 W. Lake St., Chicago 24, Ill.

USEFUL NEWS NOTES INFORMATION

If you write maker identify as IEN - 9746

BRAZING . . House publication issue describes silver brazing of building pipe lines

Handy & Harman
80-84 Fulton St., New York 7, N. Y.

Issue No. 61 of "Low Temperature Brazing News" shows how silver brazing alloys are employed in assembling pipe lines of copper, brass, stainless steel in installations ranging from a sports arena to a food plant. The company will be happy to send you a copy of this "Pipe and Tubing" issue and to add your name to the mailing list.

If you write maker identify as IEN - 9747

ELECTRONIC CONTROLS . . How to use them in production operations described in 76-page booklet

Photoswitch Incorporated
75-79 Broadway, Cambridge 42, Mass.

Forty-six new examples are presented in Vol. 2 of the company's booklet, "Cutting Production Costs with Electronic Control". Schematic diagrams and text describe applications for photoelectric controls, electronic timers and other equipment to packaging, metal working and other production operations. You may find an idea or two relating to your own work.

If you write maker identify as IEN - 9748

DRIVES . . 75th Anniversary booklet traces company's growth in power transmission field

Dodge Mfg. Co.
500 S. William St., Mishawaka, Ind.

Pictures illustrate the narrative in 16-page booklet on the company's origin and development, issued on the occasion of its 75th anniversary. You may be interested in the transition from wood pulleys and rope drives to modern products such as the Taper-Lock bushing.

If you write maker identify as IEN - 9749

HYDRAULIC DRIVES . . Booklet of suggestions on operation and maintenance of hydraulic equipment

Vickers Incorporated
1398 Oakman Blvd., Detroit 32, Mich.

Bulletin 1300-S, "Hydraulics for Industrial Machinery", is intended primarily for users of hydraulically-actuated equipment. Its 16 pages describe the qualities of a hydraulic oil and how to select one, instructions on starting a new pump, operating suggestions, maintenance hints with a check list, and a trouble-shooting check list.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9750

85-5-5-5 are important figures for the user of bronze valves. They stand for 85 per cent copper and five per cent each of lead, tin and zinc. A manufacturer of high quality bronze valves can provide certified proof that his valve bodies and center pieces contain alloys of this percentage. That's one guarantee of dependable service when those valves go on your lines. All Ohio Brass valves are cast in our own foundry. Test bars are taken from our foundry twice daily, for testing both chemically and physically, according to procedures recommended by the American Society for Testing Materials.

Ohio Brass VALVES MANSFIELD OHIO

If you write maker identify as IEN - 9751

SPRING-CORK STICKS!

Spring-Cork is the superior pressure-sensitive tape that *really* sticks. It's made of synthetic rubber, ground cork, and a powerful Holland-backed adhesive. There's nothing better for sealing out dust and fumes, absorbing shock, non-skid surfacing, etc. Assembly work goes quicker and easier when you use tough and versatile Spring-Cork.

Four thicknesses: 1/32", 1/16", 3/32", 1/8". Widths: 3/16" to 36". Available as a continuous tape, or as short lengths on continuous Holland-cloth backing. Makes excellent gaskets. Write for samples, full facts.

SPRING PACKING CORPORATION
332 South Michigan Ave., Chicago 4, Ill.

If you write maker identify as IEN - 9752

NOW you can have METERED IDENTIFICATION for formula, inventory and cost controls

STAINLESS STEEL METER
Inside and Out

STOPS CORROSION PROBLEMS HANDLING FOODS, PHARMACEUTICALS, CHEMICALS, OTHER LIQUIDS

This new Rockwell Type 2BC Rotocycle meter is of all-stainless steel construction; corrosion-resistant, easy to clean. It provides accurate records of quantities of liquids handled which are so important in quality control, scheduling, cost accounting and tax analyses. Quantity Control Registers and Remote Registration Systems are available. Described in Bulletin OG-403. *Write Rockwell Mfg. Co., Dept. B-11,* Pittsburgh 8, Pa.

You Can RELY ON ROCKWELL INDUSTRIAL METERS

If you write maker identify as IEN - 9753

PLAY SAFE ON STAIRWAYS with BIL-JAX MAINTENANCE TRESTLE

It's easy to bridge stairways, terraces, curbings and other obstacles with Bil-Jax maintenance trestle. Work platform is always level . . . always safe!

Ball-bearing casters (locking type) make it easy to maneuver. Patented. U. L. Approved. Distributors in principal cities.

Write for catalog. Address Dept. L-9

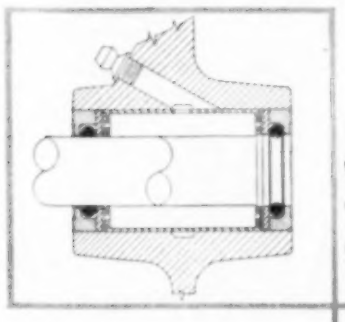
OTHER BIL-JAX EQUIPMENT
Steel Scaffolds, Swing Scaffolds, Putlogs, Ladders, Hoisting Towers for sale or rent.

West Coast: 216 W. Los Feliz Rd., Glendale, Calif.
Export Office: 80 Broad St., New York 4, N. Y.

GETS YOU UP IN THE WORLD **BIL-JAX INC.** *Archbold, Ohio*

If you write maker identify as IEN - 9754

NEW SEALED BEARINGS on Bassick wheels and casters



✓ low cost
✓ new basic design
✓ positive seal

seals in lubricant . . . seals out dirt!

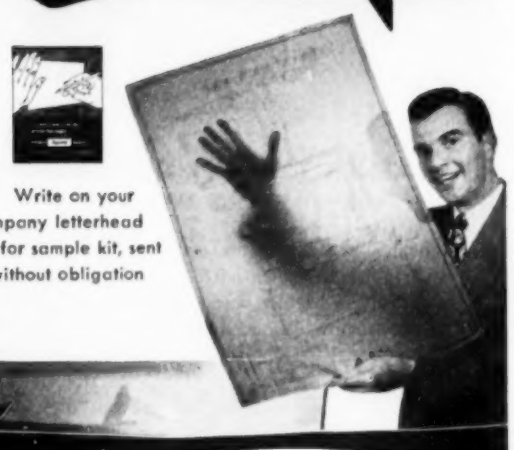
Now furnished on many popular sizes of Bassick industrial rubber-tread wheels and casters. Write for facts. THE BASSICK COMPANY, Bridgeport 2, Conn. In Canada: Belleville, Ont.

Bassick — A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

If you write maker identify as IEN - 9755

TEST IT FREE! Samples of VELLUM are yours for the asking. Send for this kit today.



Write on your company letterhead for sample kit, sent without obligation

Ageproof VELLUM

Permanently super-transparent AGEPROOF makes better prints now, or years from now

This is the famous Dietzgen vellum that combines a perfect drafting surface with perfect reproduction qualities. And AGEPROOF VELLUM cannot turn yellow, become brittle or lose transparency with age.

Plasticized through and through, AGEPROOF VELLUM contains no oil, no wax to bleed, become rancid or turn color. Because the plastic transparentizing agent permeates every fibre, you can erase repeatedly without troublesome ghosts occurring in prints, and redraw without feathered lines if you are using ink.

Available in three different weights, in frost-white or eye-easing blue. Test AGEPROOF VELLUM and you'll never use any other material for important tracings.

EUGENE DIETZGEN CO. • Chicago • New York • San Francisco New Orleans • Los Angeles • Pittsburgh • Washington • Philadelphia Milwaukee • *Dealers in All Principal Cities*

DIETZGEN — EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 9757

FABRICATING . . House publication uses magazine article style to present information

Unistrut Products Co.
1011-15 W. Washington Blvd., Chicago 7, Ill.

"Unistrut Channel" in its Vol. 1 No. 5 issue carries articles on a spread of subjects such as fire in your plant, control of excessive noise, reading time economy, as well as one on use of the company's steel framing members. If you would like to be added to the mailing list, make your request to the company on your business letterhead.

If you write maker identify as IEN - 9758

FABRICS . . Made of glass, 32-page booklet describes their use in industry

Hess, Goldsmith & Co.
1400 Broadway, 3rd Floor, New York 18, N. Y.

Three basic glass-fiber textile forms, a chart on 46 end-uses with the corresponding properties, and four basic finishing processes are described in 32-page "Glass Textiles for Industry". One section deals with parallel-strand reinforcements, shows applications and form by means of charts.

If you write maker identify as IEN - 9759

FASTENINGS . . In high temperature alloys, booklet describes problems involved in their use

H. M. Harper Company
8202 Lehigh Road, Morton Grove, Ill.

Characteristics of high-temperature bolting is one of the information sections in new 16-page Bulletin HTA. It describes problems involved, methods of bolt manufacture, alloys available, composition and properties, along with a note on titanium alloys and machining methods employed.

If you write maker identify as IEN - 9760

GAGES . . Cardboard slide selector gives tolerances for spline plug and ring gages

Vinco
8853-57 Schafer Highway, Detroit 27, Mich.

Moving the slide of new 7¼ by 3½-in. selector enables you to pick pitch diameter from zero to 8 in. for an involute spline gage. Then you can read standard tolerances for spacing between teeth, tooth thickness, tooth parallelism, concentricity, diameter. Explanatory notes are included.

If you write maker identify as IEN - 9761

GRINDING TOOLS . . Booklet of suggestions on maintenance and use of portable pneumatic tools

Rotor Tool Co.
26302 Lakeland Blvd., Cleveland 23, Ohio

"Keep 'Em Cutting" titles new 12-page booklet of maintenance suggestions to keep portable pneumatic tools operating at full power. It covers lubrication, importance of clean air, moisture, blade replacement, bearings, governors. There is also a set of safety rules, instructions on what to do when starting a new tool and a trouble-shooting list.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9762

Data Book Available!

WASHERS and METAL STAMPINGS

Write today for your free copy of this booklet that contains useful information on:

TENSION WASHERS • WIRE TERMINALS • GENERAL STAMPINGS • FRICTION WASHERS • BLANKING DIES • PROGRESSIVE AND FINISHING WASHERS • DISHED BLANKS • COMPOUND DIES • STANDARD GAUGES

Quadriga has a press capacity up to 150 tons, depth of draw to 4 in.—also, new production line facilities for job work and parts assembly service. It may pay you well, in terms of lower assembly costs, to ask about this service. When you request our booklet—ask about this, too.

THE QUADRIGA MANUFACTURING CO.

215A W. GRAND AVE., CHICAGO 10, ILL.

If you write maker identify as IEN - 9763

CUT BAR STOCK up to 5/8" Diameter

Accurately, Instantly, Easily with DI-ACRO* ROD PARTER

The DI-ACRO Rod Parter with its shearing-breaking action allows most bar stock to be cut without burr and distortion. Cutting heads accommodate eleven different round stock sizes. Also special heads for cutting square, and other shaped bars.

DI-ACRO POWER ROD PARTER

Instantaneous cutting action. Motor driven flywheel, other moving parts housed in welded steel cabinet.

*pronounced Die-ack-ro

WANT MORE INFORMATION? *Send for 32-Page Catalog*

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
718 8th Avenue, Lake City, Minnesota

If you write maker identify as IEN - 9764

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

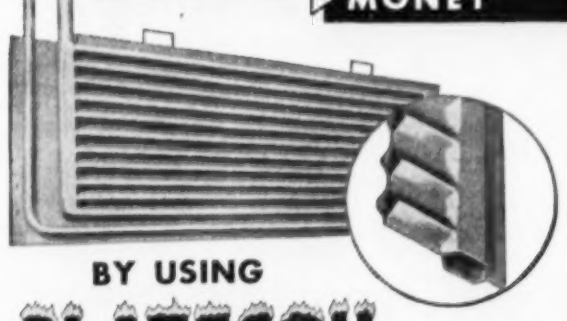
It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 9765

YOU SAVE STEEL MANHOURS MONEY



BY USING

PLATECOIL FOR TANK HEATING AND COOLING

YOU SAVE CRITICAL STEEL because "Platecoils" require less than ½ the steel used in pipe coils of the same surface area. A 22" x 119" Platecoil weighs 95 lbs. against 239 lbs. for an equivalent 2" pipe coil. 144 lbs. steel saved. YOU SAVE CRITICAL MANHOURS because "Platecoils" are easily installed, cleaned or replaced in minutes . . . No down-time . . . No tank dumping. Many manhours saved. YOU SAVE MONEY because "Platecoils" cost up to 50% less in initial cost and require less maintenance. Investigate "Platecoils" today.

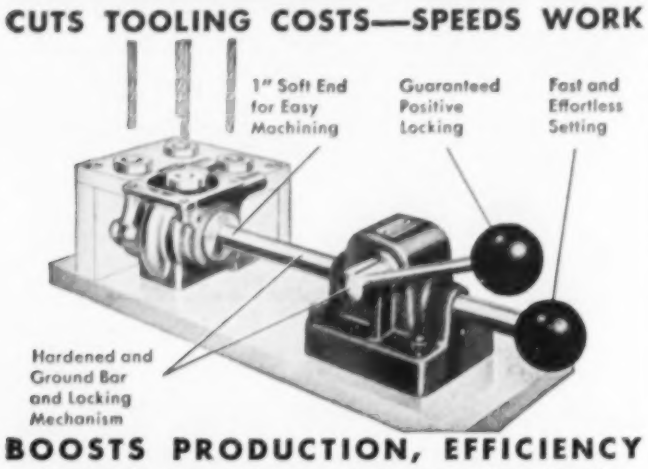
Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL Division Tranter Mfg. Inc. LANSING 4, MICHIGAN

If you write maker identify as IEN - 9766

HEINRICH "GRIP-MASTER" FIXTURE LOCK

CUTS TOOLING COSTS—SPEEDS WORK



BOOSTS PRODUCTION, EFFICIENCY

Now—at the request of industry—we offer the new "Grip-Master" Screwless Fixture Lock, applicable for fixtures and jigs used in drilling, milling operations, etc. It incorporates the same high-quality locking mechanism proved by industrial use in the famous "Grip-Master" Screwless Drill Press Vise. Pays for itself quickly by increasing production, cutting tooling costs, etc. See your Dealer, or write for details.

NEW CATALOG FREE

Be sure you have a complete Heinrich Tool Catalog in your files. Your copy will be sent free upon request.

heinrich TOOLS INC.

DEPT. 173-J • RACINE, WIS.

DRILL PRESS VISES • FIXTURE LOCKS • NIBBLERS PUNCHES • ROD CUTTERS

If you write maker identify as IEN - 9767

3 Complete Lines OF TRUMBULL SAFETY SWITCHES

The Trumbull trade mark on any switch means top quality in its class. Now the three styles described below make it easier than ever to be sure you get the best buy for your requirements in any application up to 200 amperes, 600 volts AC or DC.

Heavy Duty Industrial: Trumbull Style HCI Front Operated Safety Switches exceed NEMA Type A Standards, are deliberately designed and built to meet today's heavy industrial requirements. Unsurpassed for ease of installation, operating and maintenance advantages, and safety features.

Standard Duty: Trumbull Style HCI Side Operated Safety Switches meet NEMA Type A Standards, will serve most applications with plenty to spare.

General Use: Trumbull Style D Safety Switches meet NEMA Type D Standards, are designed for distribution and branch circuits, service entrance, and other jobs where service is not severe.

See your Trumbull Distributor or write direct for Bulletins.

TRUMBULL ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONN.

If you write maker identify as IEN - 9768

The Product Engineer CAN HELP Keep Business Booming

SYNCHRON®

TIMING MOTORS

help the engineer by delivering dependable, lower-cost performance in a wide variety of timing mechanisms.

HERE'S WHY: They're versatile, compact, powerful . . . operate in any position at temperatures from −40° to +140° F. Our engineers will help with special applications. Mail coupon for catalog, engineering data.

HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA
Send catalog and engineering data to:

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 9769

INSULATING . . Machining instructions for glass-bonded mica are based on company's experience

Mycalex Corp. of America
123-27 Clifton Blvd., Clifton, N. J.

Plant experience is the basis for the instructions in new 24-page booklet, "From One Machinist to Another", on how to machine the company's Mycalex glass-bonded mica, a hard abrasive material with a grain structure. It gives 14 general principles, 10 troubles you will not have, and specific recommendations on cutting, drilling, turning, threading.

If you write maker identify as IEN - 9770

LIGHTING . . Industrial lighting units and latest specifications in 52-page Standards Book

RLM Standards Institute Inc.
324-28 W. Madison St., Chicago 6, Ill.

"Why standards for industrial lighting units?" is the first of several questions answered by 1953 RLM Book concerning the design and performance of industrial lighting fixtures. Most of the book deals with standard incandescent and fluorescent units. It includes an illumination curve for each design.

If you write maker identify as IEN - 9771

METERS . . How to measure noise is described in new 124-page manual on the subject

General Radio Co.
273-77 Massachusetts Ave., Cambridge 39, Mass.

"Handbook of Noise Measurement" is new book, list price $1, that replaces the company's previous "Noise Primer". The new book describes the mechanism of hearing, what is a decibel, use of the sound-level meter, noise source characteristics, noise control, includes definitions and standards.

If you write maker identify as IEN - 9772

NICKEL ALLOYS . . In railroad service, picture booklet shows how and where they are used

International Nickel Co.
67 Wall St., Room 703, New York 5, N. Y.

Revised 32-page edition is announced for the booklet, "Nickel Alloys in Railroad Equipment". It contains new illustrations and data to show how these alloys meet requirements of diesel, electric, gas-turbine and steam locomotives as well as those of cars, track, stations.

If you write maker identify as IEN - 9773

PHOTOGRAPHING . . How to store negatives is the subject of new 20-page instruction booklet

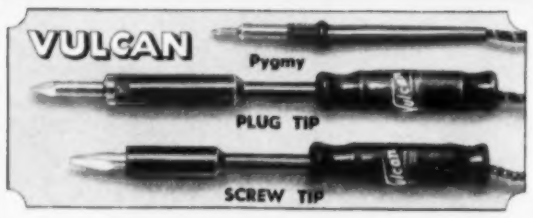
Eastman Kodak Co.
341-45 State St., Rochester 4, N. Y.

Secure storage of photographic negatives is one of two major subjects in new booklet, "Filing Negatives and Transparencies". The other is methods for classifying and identifying them so they can be located readily. The booklet illustrates a number of methods, suggests equipment, names its manufacturers, outlines a filing procedure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9774

VULCAN ELECTRIC SOLDERING TOOLS



A COMPLETE LINE

of fine professional Electric Soldering Tools. Three types. 18 sizes, from 1¾" diameter tip for the heaviest soldering to ⅛" tip for the most delicate work. Tips are of finest forged copper. (Catalog will be sent by return mail.)

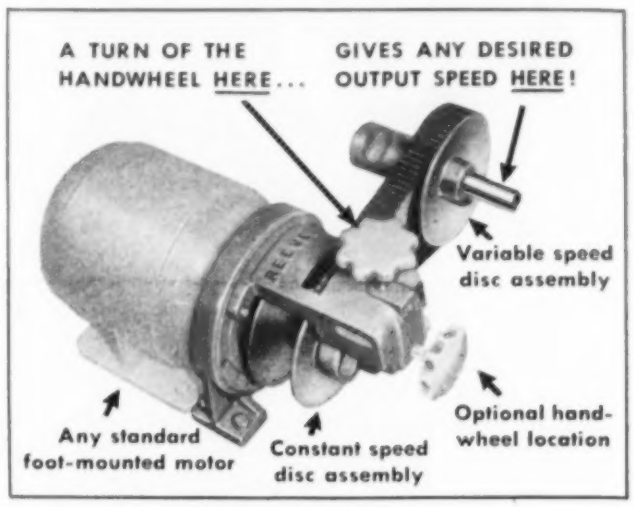
LENGTHEN THE LIFE of your Soldering Tool with Vulcan DUREVER (ironclad) Soldering Tips of pure forged copper, with a special metal coating that protects the copper from corrosion and oxidation. DUREVER tips outlast ordinary copper tips, do away with dressing and filing. (Ask for folder that tells why.)

VULCAN ELECTRIC CO.
DANVERS 8, MASS.

Vulcan Electric Soldering Tools, Solder Pots, Glue Pots, Branding Irons. Vulcan Electric Heating Elements.

If you write maker identify as IEN - 9775

NEW! REEVES Flexi-Speed Drive

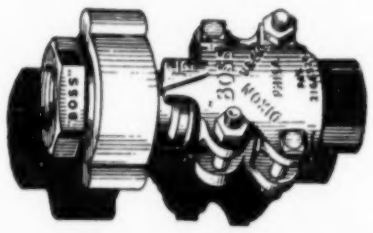


Mounts in any position . . . drives in any direction . . . gives any speed within 8:1 range . . . available in ½, ¾ and 1 hp. *Low Price!* Write today for details to Dept. IN91b-V532.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as IEN - 9776

"BOSS"



WASHER TYPE FEMALE COUPLING STYLE W-16

For leakproof, durable connections on hose for every service—steam, air, gas, water, oil, butane, hydraulics—high or low pressure. Furnished with super-strong "Boss" Offset and Interlocking Clamps. All parts (except washers) steel or malleable iron rustproofed. Deep corrugations on stem smoothly rounded to prevent damage to hose tube. Sizes ¼" to 6", inclusive.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.

PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 9777

Dealer Franchises Available in Some Areas

Just scrape off rust scales and apply Everseal's exclusive Everkrome—the world's finest primer for protecting any rust-exposed metal surface. It dries harder than ordinary red lead paints, so there's no necessity to apply a top coat for months. It can be sprayed or brushed—and dries five times faster than conventional red lead primers! Saves labor! Once on, it will not crack even if the metal is bent. This great new paint is actually less expensive than old fashioned red lead primers!

Send For Complete Information Today!

Clip this ad to your letterhead and mail to:

Everseal MANUFACTURING COMPANY, INC.
250 WEST 57th STREET • NEW YORK 19, N. Y.

If you write maker identify as **IEN - 9778**

Easy to use . . . Easy to clean . . . Easy to service

DERBY SEALER — **MODEL 32 GUMMED TAPE DISPENSER**

For Shipping Room and Production Line Packaging

- Rugged simplicity aptly describes the Model 32. Derby's exclusive, one-piece solid casting eliminates parts and provides added rigidity. What's more, the Model 32 is easy to clean, even during the hot summer months when machines tend to "gum-up."
- The Derby Model 32 accommodates any tape from 1" to 3" wide. Delivers from 4 inches to 34 inches of tape at one stroke.
- Derby's exclusive "moisture-control" system maintains a maximum high water level in the tank to assure a constant supply of water to the brush, no matter how fast tape is dispensed.
- Also available is the Model 32-T with tool steel shear-type blades for cutting reinforced strapping tapes. Blades have two cutting edges to double their useful life before resharpening.

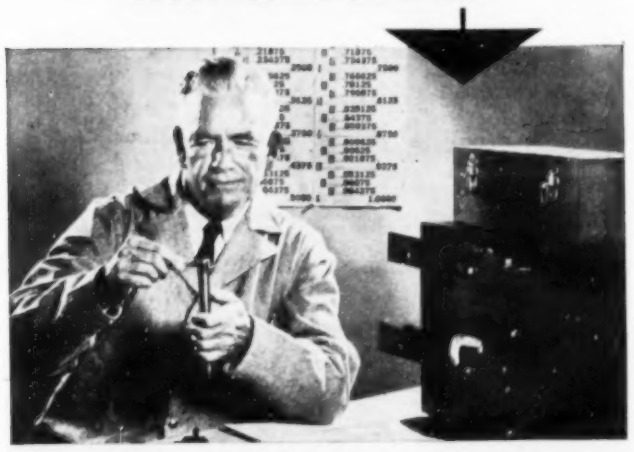
For further information, write Dept. IF

DERBY SEALERS, INC.
Derby, Connecticut

If you write maker identify as **IEN - 9779**

Stop annoying Blink...Blink...Blink

WITH WATCH DOG NO-BLINK FLUORESCENT STARTERS



Annoying fluorescent blink and excessive maintenance go hand in hand. Here's what Watch Dog* starters do about it.

- Watch Dog starters *stop blinking* by automatically turning off failing fluorescent lamps.
- A Watch Dog starter *keeps the lamp off* until the red reset button is pushed when new lamp is installed. No recurrent blinking every time lights are turned on.
- Watch Dogs *outlast* ordinary starters—by as much as 10 to 1. Ballasts last longer, too.

You can stop fluorescent blinking—cut starter replacement costs—cut ballast replacement costs—by changing to General Electric Watch Dog no-blink starters now—and by specifying them when you next buy new fixtures. For a copy of folder Q38-942, write Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

**Registered Trade-mark General Electric Company*

LOOK FOR THIS TAG when you buy fluorescent fixtures. It's your guarantee that the fixture is equipped with G-E Watch Dog starters.

For all replacement needs—use the famous Watch Dog no-blink starter with the red reset button.

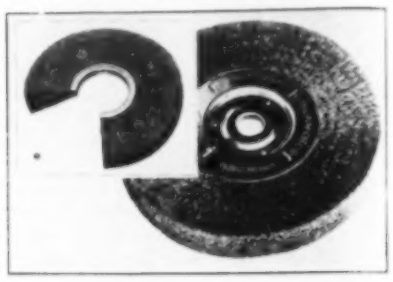
You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as **IEN - 9781**

BRUSH . . Wheel design mounts wire bristles in hub rings

Source: FULLER BRUSH CO.
3583 Main St., Hartford 2, Conn.



Flanges clamp in place

Fullanchor is a new wheel type brush in which tufts of wire bristles are secured in hub rings by staples and the rings are assembled between interchangeable steel flanges. The flanges lap over the sides of the bristles so only a limited length is exposed. As the bristles wear down, the flanges can be changed for units of smaller diameter.

Four sizes measure 6 to 12 in. in diameter. Bristles can be oil tempered, high tensile, crimped or stainless steel, brass, nickel. There is also a range of gages. The 8-in. brush can be operated safely at speeds to 8,000 rpm.

If you write maker identify as **IEN - 9782**

CONDUIT . . Threaded rigid steel with smooth aluminum enamel interior

Source: NATIONAL ELECTRIC PRODUCTS CORP.
140 Stanwix St., Pittsburgh 22, Pa.

Ten foot lengths
½ to 6 inches

Xduct rigid steel conduit is now available with an aluminum enamel interior coating that assists in pulling wiring into place. Seven No. 14 conductors can be pulled through a standard length of the new conduit with pull ranging from 40 to 80 pounds. This compares with 70 to 100-lb. minimum for uncoated conduit. Exterior finish is by electro-galvanizing. The end threads, machined before galvanizing, are also protected. The exterior is a distinctive silvery color.

If you write maker identify as **IEN - 9783**

MIXING . . Hand attachment to stir paint in a 5 gallon container

Source: MARIEN METAL PRODUCTS CO.
1218-22 E. 9-Mile Road, Hazel Park, Mich.

List is $5

New assembly of the Prop crank operated stirring attachment applies on 5-gal. lugged cover paint containers. It clamps in place to position a paddle centrally and permit lifting, lowering and rotating. The crank operates in an Oilite bearing. A nut permits turning the blades in both directions to assist in the mixing action. The attachment is made of cadmium plated steel. It can be used as a handle to carry the full container.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9784**

WISSCO STEEL PROCESSING BELT

Turn your products out faster, more economically in continuous straight-line production with a Wissco Belt. To order, write or call our nearest sales office.

THE COLORADO FUEL AND IRON CORPORATION—Denver, Colorado
PACIFIC COAST DIVISION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

1431

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as **IEN - 9785**

BE FRESH . . STAY FRESH

Wear a

Dupor no. 1

miniature NOSE MASK for Dust, Fumes, Paint Spray

Has 9 sq. in. filter. Mask is of soft rubber equipped with nose wire that's adjustable to any shape nose. Exhalation valve exhausts breathed air and keeps out unfiltered air. Handy as a pair of glasses. Complete panorama vision, no blind spots. Does not interfere with talking, eating, smoking. Fits the vest pocket. Weighs 1 oz.

Sample sent $1.20 *ppd*

H. S. COVER, South Bend, Ind.

If you write maker identify as **IEN - 9786**

FEDERAL PRESSES

28 YEARS OF QUALITY CONSTRUCTION

Don't let light bulky work tie-up big-ton presses!

NO. 44 FLYWHEEL TYPE 35-ton Capacity

This Federal #44 has generous, "oversize" dimensions, making it ideal for light, bulky work that small standard presses can't handle. Note its *extra* shut height, *extra* throat depth, *extra* ram and bed areas. Typical Federal workmanship and quality. Available in flywheel or geared models—also in 26-ton size. High speed controls, optional.

Write for new catalog showing complete line. Six to 80-ton capacities.

THE FEDERAL PRESS COMPANY
503 Division Street, Elkhart, Indiana

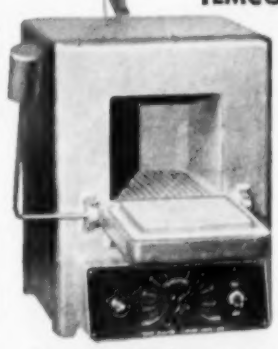
If you write maker identify as **IEN - 9787**

GET THE EXTRA ADVANTAGES OF

Stepless Heat Control

FROM 350°F. TO 1850°F.

WITH THESE LOW COST TEMCO ELECTRIC FURNACES



Economical to own and operate, TEMCO models RCE (illustrated) and GTP are ideal "utility" units for the laboratory, shop or plant. Exceptionally handy for general lab work, production control and heat treating. Both models have built-in TEMCOMETER stepless control which is unaffected by line voltage fluctuations and lets you select *and hold* any temperature from 350° to maximum . . . indicating-type pyrometer calibrated in F. and C. scales . . . embedded heating element completely surrounds chamber . . . cast aluminum body . . . special insulation. Chamber dimensions: Model RCE—4¾" W., 4¼" H., 6" D.; Model GTP—4" W., 3¾" H., 3¾" D.

Price Model RCE Complete For 115V. or 230V. AC	Price Model GTP Complete For 115V. or 230V. AC
$85.00	$67.50

Write for data and dealer's name

THERMO ELECTRIC MANUFACTURING CO.
482 Huff St., Dubuque, Iowa

If you write maker identify as **IEN - 9788**

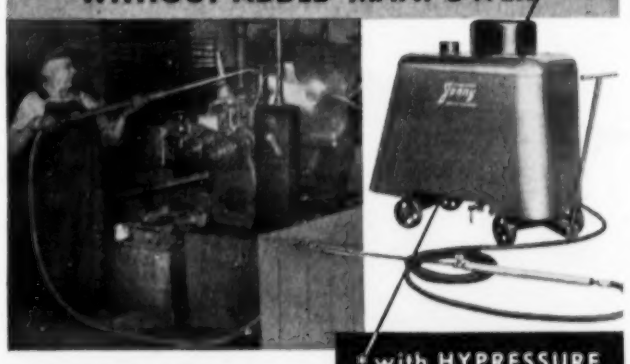
Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J
TOMKINS-JOHNSON
VALVES · AIR AND HYDRAULIC CYLINDERS · CUTTERS · CLINCHERS

If you write maker identify as **IEN - 9789**

GET *MORE* PRODUCTIVE HOURS WITHOUT ADDED MANPOWER*



*with HYPRESSURE
Jenny
STEAM CLEANER

One man, using HYPRESSURE JENNY, can do more cleaning in a single hour than 10 men can accomplish in the same time by outmoded hand cleaning methods.

JENNY cleans anything—*anywhere*—machinery . . . tools . . . walls . . . floors . . . skylights . . . trucks . . . tank cars . . . and processing equipment of every description, in factories, mills, food plants, garages, repair shops, and on the farm. JENNY hates grease, muck and dirt—cleans right "down-to-the-bone." Saves up to 40% of mechanics' time, usually lost fighting dirt and grease on repair work.

Keeping house with JENNY pays valuable dividends in stepped-up production, fewer lost-time accidents, lower fire insurance premiums and increased personnel efficiency.

Write today for information packed booklet "1001 WAYS TO EXTRA PROFITS with HYPRESSURE JENNY STEAM CLEANER." It's yours FREE, and without obligation.

HYPRESSURE JENNY DIVISION
Homestead Valve Manufacturing Company
"Serving Since 1892"
P. O. BOX 85 CORAOPOLIS, PA.

If you write maker identify as **IEN - 9790**

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS
Write for information

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 9791**

PIPE FITTINGS . . New house publication reviews developments in pressure piping, fittings

Taylor Forge & Pipe Works
4733-37 W. 14th St., Cicero, Ill.

First issue of "Taylor Forge" is a 48-page bulletin on recent developments in codes and standards for piping and pressure vessels to bring you up to date. It reprints tables of allowable stresses and excerpts from the pressure piping code. It also includes information on the company's products. Your name will be added to the list to receive this and future issues.

If you write maker identify as **IEN - 9792**

PRESSES . . House publication issue describes use of index table in production press work

Denison Engineering Co.
1158-62 Dublin Road, Columbus 16, Ohio

Examples are presented in the Index-Table issue of the company's Denison Press on the use of its hydraulic index table in combination with its hydraulic Multipress. It shows the parts involved, the setup employed, and quotes production figures. Your name will be added to the list on request.

If you write maker identify as **IEN - 9793**

PUMPS . . House publication issue tells about Worthite pumps for pickling solutions

Worthington Corporation
423 Worthington Ave., Harrison, N. J.

June issue of "Worthite News" is devoted to the problems involved in metal cleaning and acid pickling. It stresses the importance of acid-resisting materials, quotes four examples of trouble that happened, describes several typical pickling installations using the company's Worthite pump. You can request addition of your name to the mailing list.

If you write maker identify as **IEN - 9794**

SAWING . . Pocket instruction booklet on how to select and use hacksaw blades, bandsaw blades

Clemson Brothers Inc.
18-22 Cottage St., Middletown, N. Y.

Correct use of hand hacksaw blades and frames, points to watch in power sawing operations, blade selection table by materials cut, troubles and remedies, are included along with catalog data in 28-page Booklet 122-S-10.

If you write maker identify as **IEN - 9795**

SILICONES . . Ten-year review booklet uses informal method to emphasize their properties

Dow Corning Corp.
P. O. Box 592-A, Midland, Mich.

Ten "impossible" stories from American folklore are paired off with ten characteristics or properties of the company's silicone materials in 24-page booklet, "Tall Tales and Fabulous Facts". Typical is the story of how Davy Crockett loosened the earth, frozen in its axis on a January morning, with a ton of bear oil. This is contrasted with silicone oils and greases, relatively unaffected by heat or cold. Copy on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9796**

when you use
BOKUM BORING TOOLS

The design of Bokum Boring Tools is based on a mathematical formula which guarantees the correct cutting and clearance angles anywhere around the periphery of the cutting head.

If you're scrapping too much work because of imperfect holes; or if you're discarding half the potential life of your tools, try Bokum Boring Tools. You'll suffer less waste and enjoy more profit.

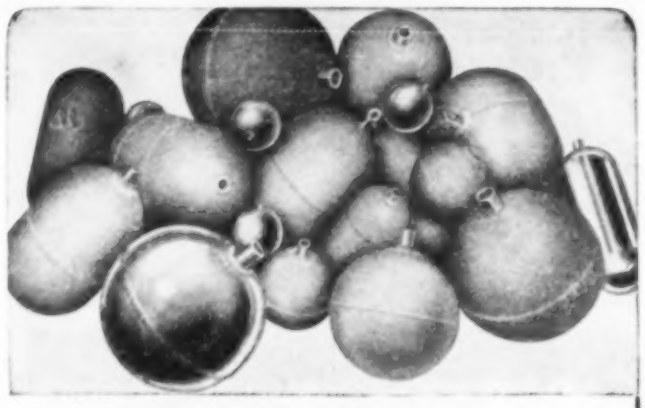
For maximum life of Bokum Tools, we recommend Bokum special Resharpening Fixtures.

STYLE A *for general boring*
STYLE B *for bottoming and facing*
STYLE C *for internal threading*

Send for the catalog that interests you:
High speed tools No. 1139-6.
Carbide-tipped tools No. 398-6.
Solid carbide for deep hole boring No. 948.

BOKUM TOOL CO.
TRADE MARK REG. U. S. PAT. OFF.
SINGLE POINT BORING TOOLS—INTERNAL THREADING, BOTTOMING AND FACING TOOLS—CARBIDE TIPPED TOOLS
DEPT. N • 14775 WILDEMERE AVE. • DETROIT 21, MICH.

If you write maker identify as **IEN - 9797**



Send for Nicholson

FLOAT BULLETIN 753

Complete Data on Welded Floats: Diagrams, Tables, Formulae for Calculation of Buoyancies

The booklet is a standard reference for specifiers of welded floats. Nicholson furnishes any type: for external or internal pressures; in stainless steel, Monel, chromium, cadmium or copper-plated steel. Sizes, 2" to 14" diam., press. to 4800 lbs.; standard or special connections. Quick delivery on many sizes and shapes. Nicholson floats are standard with hundreds of manufacturers.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS
159 Oregon St., Wilkes-Barre, Pa.

If you write maker identify as **IEN - 9798**

SEE FOR YOURSELF—Next time try a

FORT WORTH QD SHEAVE

***EASY ON-
EASY OFF
WITH POSITIVE
PRESS FIT!***

The Fort Worth "QD" Sheave with interchangeable hub is easily and quickly installed and removed. You get a positive press fit all the way around the shaft eliminating wobble and eccentricity found in old style sheaves. Here's the job tested, precision-engineered hub and sheave that is used throughout industry for transmitting power.

Your industrial distributor is kept well supplied with frequent shipments from the nearest Fort Worth warehouse, giving your orders prompt delivery from stock on hand.

Call your Fort Worth Distributor today!

"QD" HUB ALSO FITS FORT WORTH Roller Chain SPROCKET

Speed Changes are simplified and "spare" sprockets can be carried more easily.

FORT WORTH STEEL & MACHINERY CO.
DEPT. 29, 3600 McCART, FORT WORTH, TEXAS
FORT WORTH WAREHOUSES: • CHICAGO • ATLANTA • ST. LOUIS • JERSEY CITY • KANSAS CITY • LOS ANGELES • HOUSTON • SAN FRANCISCO • MEMPHIS

If you write maker identify as **IEN - 9799**

ROTARY UNIONS
(Trade Name)

Type "S" Rotary Union

What's your Sealing Problem?

Direct factory representatives are available at all of our offices to recommend the right ROTARY UNION for your use . . . or to work out unusual sealing problems.

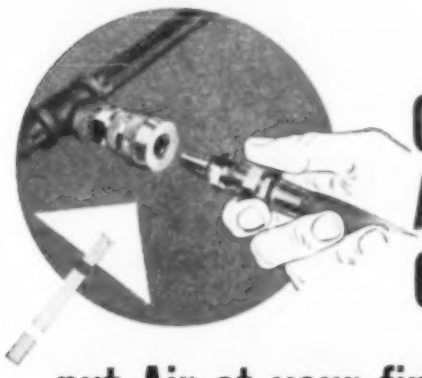
The ROTARY UNION gives the tightest, longest lasting rotating seal you can get. It is a self-contained unit . . . never needs tightening or adjusting . . . built to take strain from moving and sealing parts. Three years perfect service is not uncommon.

Contact our nearest office for full information or write Dept. 9E for our Catalog.

"Where Good Connections Count" ®

PERFECTING SERVICE COMPANY
332 Atando Avenue (Home Office and Factory) Charlotte, N.C.
Atlanta · Chicago · Cleveland · Philadelphia · Providence · New York · Montreal · Toronto

If you write maker identify as IEN - 9800



Quick Acting Couplers

put Air at your fingertips

Plug in compressed air as you would electricity with **Schrader Quick Acting Couplers.** Spot couplers along walls, benches or columns to put air just where it's needed. Plug in your air tools close to the work.

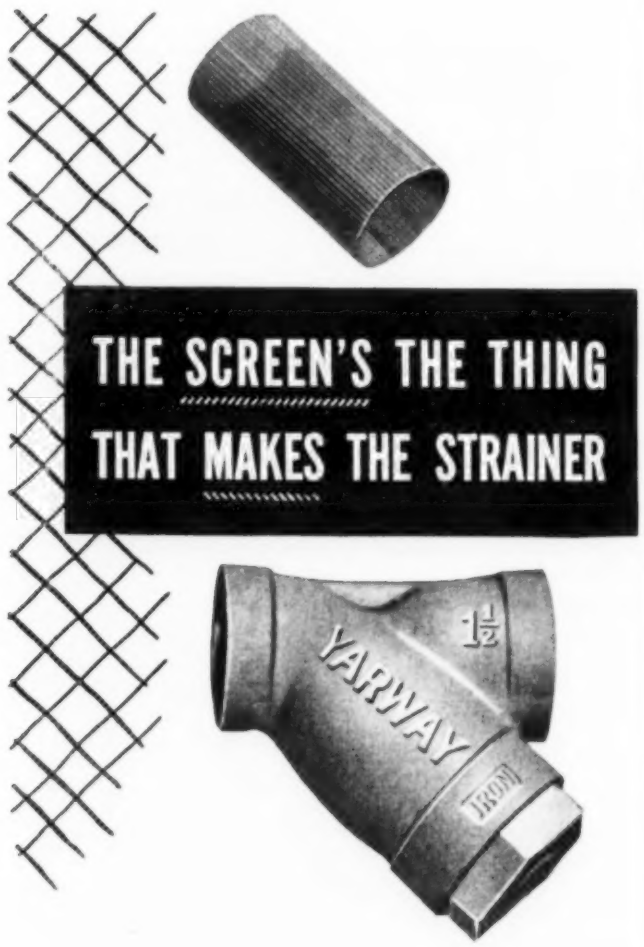
A simple push locks air line in place, automatically starts air flowing. A swivel action prevents hose kinking. Line cannot be accidentally uncoupled—it requires a definite man-made twist on the sleeve. Uncoupling automatically shuts off air.

Available in many sizes, both for standard and heavy duty work, Schrader Quick Acting Couplers make air one of your most useful tools. You'll find full details in the Schrader catalog. Send for it today.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-35, Brooklyn 38, N. Y.

If you write maker identify as IEN - 9801



■ A high-grade woven Monel wire screen is the heart of the Yarway Fine Screen Strainer—one reason why hundreds of thousands of Yarways police the pipelines in nearly every industry, stopping rust, scale and dirt from clogging vital equipment.

Another reason why it pays to select Yarways—strainer screens come out with cap when removed from body. Eliminates costly time delays in fishing out old screens from strainer bodies.

More reasons—superior finish to prevent rust and for better appearance; straight threads, machined faces and spark-plug-type gaskets on screen caps; ten sizes from ½" to 3".

Yarway Strainers are stocked for IMMEDIATE DELIVERY by 250 local distributors. Write for Bulletin S-203.

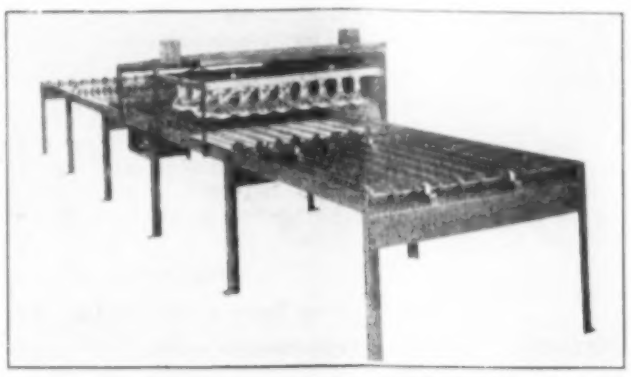
YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY *fine screen strainers*

If you write maker identify as IEN - 9803

DRYING . . Infra-red oven and metal conveyor to handle flat work

Source: MISKELLA INFRA-RED CO.
7307 Grand Ave., Cleveland 4, Ohio



Conveyor available without oven

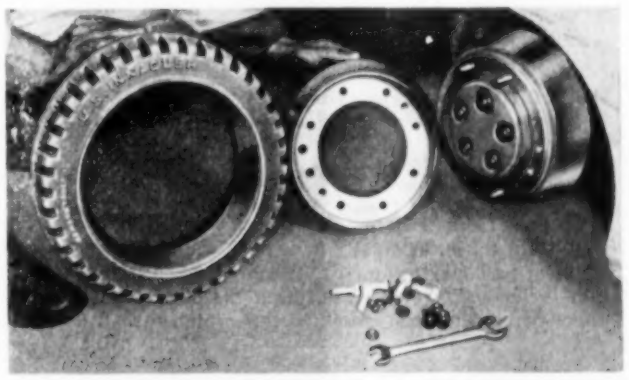
The bed of this new Heli-Veyor combination work conveyor and infra-red oven is made of formed steel sheets to provide a 4-ft. conveyor width. Three standard sections include one 5-ft. and two 9-ft. lengths. Each mounts cross shafts on ball bearing pillow blocks to carry sheaves over which spring wire coils operate in closed loops. The conveyor bottom is insulated and mounted on structural legs.

The oven applies over the center section. It includes two panels, each with two rows of reflector lamps. A slot between the panels permits escape of fumes to a sloping cover fitted with a 6-in. pipe connection to a suitable vent. The lamps are standard at 125 watts. They can be specified for 250 watts.

If you write maker identify as IEN - 9804

TIRE . . Solid cushion rubber to apply and to replace in the field

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., New York 20, N. Y.



Action compares with pneumatic tire

Innacush trade names a demountable industrial solid rubber truck tire, previously described IEN-9323-48, for optional use on original equipment. It now is available in three sizes for field application and replacement to take the place of ten sizes of existing industrial pressed-on solid and pneumatic tires.

The new tire is designed for a split wheel, tapered to 12½ deg. and slightly larger than the tire bore, so there is ample compression when the wheel is bolted together. The solid rubber combines a tough exterior with a softer interior.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9805

BORSUDS HEAVY-DUTY BORAX-TYPE HAND CLEANER

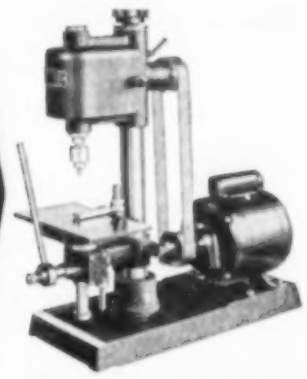
BORSUDS' grime-chasing agent, borax, is completely soluble — will not clog drains. Combining borax with the finest medium and low titer neutral toilet soaps, Dolge has developed a product sure to find favor with factory and office personnel alike. Agreeable to use, gentle to the skin, quick-acting against the most ingrained grime. BORSUDS comes in convenient 5-lb. packages, or in bulk for even greater economy.

Your Dolge Service Man will gladly demonstrate BORSUDS under your own shop or office conditions.

FOR FREE SANITARY SURVEY of your premises consult your DOLGE SERVICE MAN

specialists **DOLGE**
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 9806



THIS TAPPING MACHINE IS *UNIQUE* IN THE FIELD OF SMALL HOLE PRECISION TAPPING

TAPPING CAPACITY
From the smallest and finest tap up to 10-32 inclusive.

SPINDLE SPEEDS
1200 to 2600 R.P.M.

CLEARANCE
Taps to the center of 6½"

HAMILTON®
TAPPING MACHINE
SUPER SENSITIVE
SUPER ACCURATE

• Spindle idles in reverse. Changes direction of rotation automatically as pressure is applied to tap. Withdraws tap instantly and automatically when pressure is released.

REDUCE TAP BREAKAGE REDUCE SCRAP WRITE FOR FREE BULLETIN T-5313.

THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN - 9807

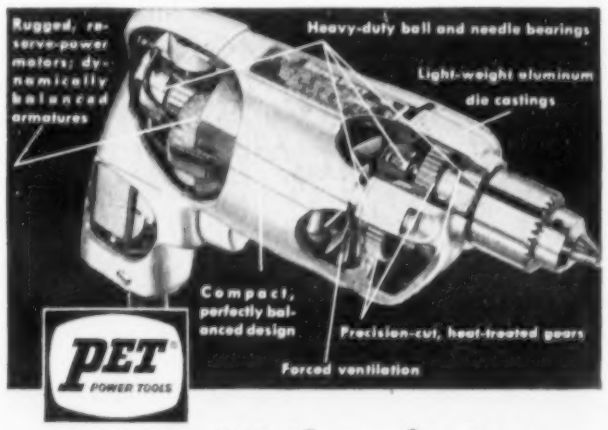
. . . there's a SUNDSTRAND Straight-Line Action Air Sander to solve it!

No swirls, no pressure marks, no fatiguing vibration! Used throughout the world for: Wood finishing . . . building materials, furniture, cabinets, wood parts, etc. • Plant production and maintenance work • Finishing metal and plastic parts • Truck, car and machinery refinishing • Both single and double pad models are available. Ask for bulletin IEN-9.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 9808



You get ALL these features when you buy PET DRILLS!

If you want the best, take an extra look at the PET Superduty Drill above! Here's a continuous-duty drill—built to *work* right and *handle* right.

And, the price is right, too! All features shown are *standard* in PET Superduty Drills—at a *standard drill price!* Complete line of 54 ¼", ⅜" and ½" models gives you wide selection—in pistol or saw-type grip. Use coupon below to get complete facts!

PORTABLE ELECTRIC TOOLS, INC., 320 W. 83rd St., Dept. IE-93, Chicago
In Canada: Portable Electric Tools, Ltd., 452 Birchmount Rd., Toronto

MAIL COUPON FOR FREE BULLETIN

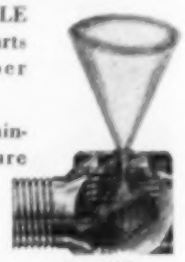
Please send me free PET Superduty Catalog and name of nearest distributor.

Name _____ Title _____
Company _____
Address _____
City _____ State _____

If you write maker identify as IEN - 9809

DELAVAN SPRAY NOZZLES FOR UNUSUAL APPLICATIONS

Type WD


Type WR

There is a DELAVAN NOZZLE for any flow rate from 2 quarts per hour to 63 gallons per minute.

TYPE WD — ideal for obtaining finest possible pressure atomization.

TYPE WS — available for either full or hollow cone spray. Excellent for a wide variety of special applications.

TYPE WR — a right angle nozzle producing hollow cone spray similar to Type WS.

TYPE AG — delivers flat uniform spray without concentration at edges. Drifting reduced to minimum.

Type WS

Type AG

Write for Catalog No. 31

DELAVAN MANUFACTURING CO.
GRAND AVENUE & 4TH STREET
WEST DES MOINES, IOWA

If you write maker identify as IEN - 9810

Generalift PALLET BOXES

1. CUT MATERIALS HANDLING COSTS
2. REDUCE STORAGE COSTS

SEND FOR FREE BOOKLET

General Box COMPANY
1815 Miner Street
Des Plaines, Illinois

Factories: Cincinnati; Denville, N. J.; Detroit, East St. Louis, Kansas City, Louisville, Milwaukee; Prescott, Ark.; Sheboygan; Winchendon Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

If you write maker identify as IEN - 9811

Automatically
SOUNDS SIGNALS, OPERATES EQUIPMENT ON ACCURATE SCHEDULES

Montgomery PROGRAM CLOCKS & INDUSTRIAL TIMERS

Program clocks for automatic control of signal systems, governing work periods, permitting manual operation for special programs or emergency alarms without affecting accuracy of pe-set schedule.

Industrial timers start and stop equipment automatically to a pre-set schedule. Wide application for shop and laboratory operations. Special timing equipment engineered to your requirements.

Request free specification and data sheets

MONTGOMERY MANUFACTURING CO., Owensville 8, Ind.
Please send free Industrial Timer data sheets
Name .....
Position ..... Company .....
Address ..... City ..... State .....

USEFUL INFORMATION
(Concluded)

If you write maker identify as IEN - 9812

CLAD STEELS . . Welding instructions for clad steel plate in 14 by 20 inch wall chart

Lukens Steel Co.
501-5 Lukens Bldg., Coatesville, Pa.

"Clad Fabrication Data" uses captioned drawings to describe recommended steps in making usual arc welds and full alloy welds for the company's clad steels. Tables list electrodes for clad side, alloy electrodes for corner or T joints, and information on flame cutting.

If you write maker identify as IEN - 9813

TESTING . . How a spectrophotometer works shown by color diagram in new information booklet

Beckman Instruments Inc.
800 Mission St., South Pasadena 5, Calif.

Non-complicated description of a complex instrument is provided by new 18-page pocket booklet, "What Every Executive Should Know about Spectrophotometry". Part of the description is a schematic diagram that shows in color how the instrument works for absorption, reflection, flame measurements. Uses range from checking color of beer to analyzing Vitamin A in minutes instead of weeks.

If you write maker identify as IEN - 9814

TESTING . . 68 page catalog provides review on 115 items of measuring equipment

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

Production and laboratory test equipment made by the company is reviewed in Second Edition of Bulletin GEC-1016A. It ranges from surface roughness scales to mass spectrometers, from current indicators to automatic oscillographs, from dc. amplifiers to radiation monitors. List prices are given.

If you write maker identify as IEN - 9815

THREAD DATA . . Letter size sheet gives thread information on standard nuts and bolts

Murphy Diesel Co.
5315-19 W. Burnham St., Milwaukee 14, Wis.

Threads from ¼-20 to 2 in. 4½ are covered in new Nut and Bolt Data Sheet, originally developed for the company's own engineering department, now offered on request. The information includes tap drill sizes, pitch diameters, nut and head dimensions, American standard taper pipe thread data.

If you write maker identify as IEN - 9816

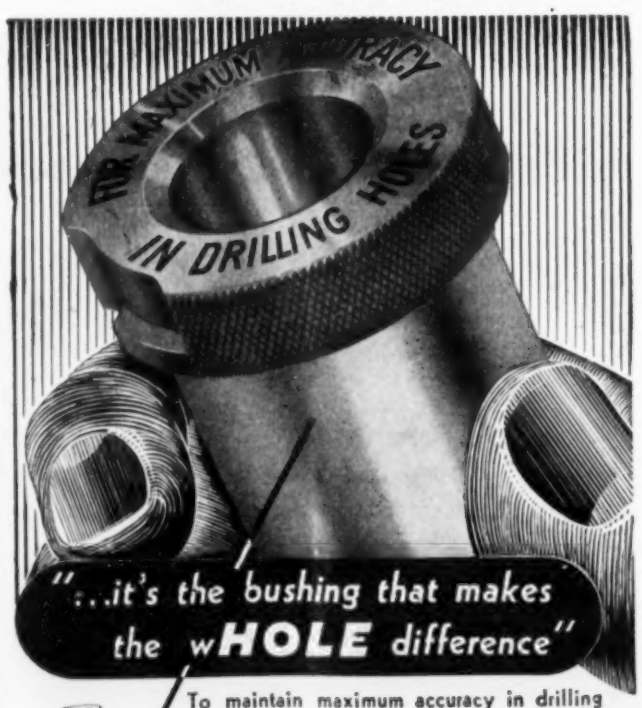
TUBES . . Welding procedures for alloy steel tubes are given in chart form

Babcock & Wilcox Co.
4027-31 Fourth Ave., Beaver Falls, Pa.

Arc-welding electrode, preheating, and postwelding heat treatment are given for carbon, intermediate chromium-molybdenum alloy and stainless steels in new letter-size Data Card TDC-155. The three pieces of information are given in summary form for similar or dissimilar alloys.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9817



"...it's the bushing that makes the wHOLE difference"

To maintain maximum accuracy in drilling operations, use the bushing that's precision made for the job...use Acme. Write for catalog.

Acme Industrial Company
Makers of Hardened and Ground Precision Parts
215 N. LAFLIN STREET • CHICAGO 7, ILLINOIS
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

If you write maker identify as IEN - 9818

C-D-F *makes it!*

Silicone
TAPES and SHEETS

VARNISHED FIBERGLAS
High temperature resistance
High dielectric strength
Low dielectric loss
Resistant to moisture
High tensile strength
Good flexibility

SILICONE RUBBER FIBERGLAS
High temperature resistance
High dielectric strength
Low dielectric loss
Resistant to moisture
High tensile strength
Extreme flexibility

C-D-F Silicone Varnished Fiberglas cloth, and Silicone Rubber-coated Fiberglas cloth meet A.I.E.E. Class H electrical insulation requirements. They resist mild alkalis, non-oxidizing acids, mineral oils, oxygenated solvents. Silicone Rubber Fiberglas is recommended for many applications where a flexible material with good thermal conductivity is required. C-D-F Silicone tapes and sheets are available in a wide range of sizes in continuous rolls. For complete details, write for Technical Bulletin #47.

THE NAME TO REMEMBER . . . SILICONE TAPES AND SHEETS

Continental-Diamond Fibre Company
NEWARK 21 • DELAWARE

If you write maker identify as IEN - 9819

today's "wonder drug" for industry

NOW...the greatest cost-saving, labor-saving finishing development in a decade!

Supersheen Speed Finishing eliminates to a great extent previous time-consuming operations like filing, grinding, blasting, buffing — GIVES YOU ALMOST UNBELIEVABLE COST REDUCTIONS!

It does away with costly hand deburring, and other hand operations requiring the use of large quantities of expensive materials and extremely costly skilled labor.

Nearly all types of metal parts—FERROUS OR NON-FERROUS can be simultaneously finished by the SUPERSHEEN process to absolute micro-exactness. Parts now being successfully SUPERSHEENED range in size from very small to large parts, such as jet engine blades and large gears.

SUPERSHEEN SPEED FINISHING is used by hundreds of corporations, from the very small to the world's largest. Among them — GENERAL MOTORS CORPORATION, TIMKEN ROLLER BEARING CORPORATION, EASTMAN KODAK CO.

It will pay you to write for complete facts on the SUPERSHEEN process.

New FREE 52-PAGE CATALOG

52 pages of facts, figures and "before and after" photos—tell the COMPLETE story of Supersheen Speed Finishing. GUARANTEED TO OPEN YOUR EYES TO BIGGER SAVINGS THAN YOU EVER THOUGHT POSSIBLE!

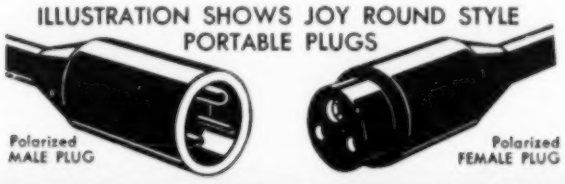
Get your FREE copy today. Write Dept. G-9

ALMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as **IEN - 9821**

Since '26 JOY electrical plugs and receptacles have been Industry's outstanding value for portable power transmission. Molded as trim, one-piece (Neoprene/rubber) units they can't crack or shatter . . . won't lose their shape and are amazingly resistant to falls, blows, acids, oils, moisture or sunlight. Thousands of styles and shapes ranging from "cartridge-size" models to mammoth round (S.P.B.) units used in marine and mining applications have been developed. NO question about it . . . the JOY electrical connector line deserves a "second look". Ask for your free copy of Bulletin MC108

ILLUSTRATION SHOWS JOY ROUND STYLE PORTABLE PLUGS



JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as **IEN - 9822**

MOTO-TRUC

Designed for . . .

Regardless of individual titles, it will pay you to get **ALL** the facts on MOTO-TRUC . . . and there's a MOTO-TRUC for every purpose.

Pallet type "Walkie" truck 4000 to 6000 lb. capacity.

SEND FOR BULLETIN NO. 51

Model G. A. Tractor

Hi-lift "Walkie" type 3000 to 4000 lb. capacity.

Platform "Walkie" type 4000 to 10,000 lb. capacity.

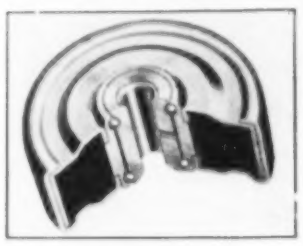
Representatives in Principal Cities

The MOTO-TRUC Co.
MOTO-TRUC Designed for the Industry PATENTED
1987 E. 59th STREET • CLEVELAND 3, OHIO

If you write maker identify as **IEN - 9824**

WHEEL . . Pressed steel design, ball bearing hub, 4, 5, 6 in. diameter

Source: FAULTLESS CASTER CORP.
1519-23 N. Garvin St., Evansville, Ind.



For general duty

Operation load is to one ton and standing load to two ton for this new pressed steel wheel. The flanges on the two sides are formed integral with the double thickness rim. They are flanged for a press fit on the outer race of the ball bearing hub. Dust caps keep dirt out of the raceways. The steel is able to take shock loading without danger of chipping or cracking.

If you write maker identify as **IEN - 9825**

INSULATING . . Silicone varnish to replace special purpose materials

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

One coat builds 5 mil film

Type SR-17 is a new silicone insulating varnish that combines ability to resist heat with high bonding strength and flexibility at low temperatures. Requirements for both high temperature insulation and low temperature flexibility are met by altering the cure rather than by using different varnishes. The new material is coated on glass cloth to be cured in 15 to 30 min. at 250 deg. C. for high temperature use, or for 20 to 30 min. at 300 deg. C. for flexibility at temperatures down to minus 30 deg. C. There is no material change in dielectric strength during exposure to 250 deg. C. for 30 days after being bent over a ⅛-in. mandrel.

The one material is suited to coat glass cloth for use in power cable and Class-H insulation, to provide a tough bond for flexible mica tapes and coil wrappers, to treat glass shelving, to impregnate asbestos for layer insulation. The vanish also is suited for use as a base in protective and decorative paints requiring heat and weather resistance.

If you write maker identify as **IEN - 9826**

RECTIFYING . . Selenium units, rate 1 to 8.5 amp. on 110 or 220 volts

Source: AMERICAN RECTIFIER CORP.
95 Lafayette St., 1st Floor, New York 13, N. Y.

My-T-Midget

New rectifier plugs into a single-phase 110 or 220-volt line to supply 1 to 8.5 amp. of dc. output on 110 or 220 volts. It mounts a toggle switch and a red pilot light to signal closed circuit. Protection is provided by a fuse on the housing face.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9827**

This TUFFLEX sample kit MAY SOLVE YOUR PROBLEM

Seeing is believing—and this kit, containing actual samples of Tufflex may point the way to new product improvements and cost-saving for you. Tufflex is the amazing felted cellulose fiber that's fleecy, soft and tough at the same time. Tufflex resists heavy impact blows—die-cuts with clean edges—insulates—absorbs sound. Its wonderful flexibility suits it to a wide variety of uses. Send now for your free Tufflex sample kit and full information. Wood Conversion Company, Dept. 126-93, First National Bank Building, St. Paul 1, Minnesota.

Keep Your Eyes On . . . **TUFFLEX***
Guaranteed by Good Housekeeping
Cellulose Cushion Padding
*REG. U.S. PAT. OFF.

If you write maker identify as **IEN - 9828**

SOUTH BEND

LATHES • DRILL PRESSES • SHAPERS

for More Efficient Machining

SEND FOR THIS NEW CATALOG

Complete in every detail, this new South Bend catalog is a valuable reference book which every shop man should have. Send for your copy today.

Engine Lathes — 9", 10", 13", 14½", 16" and 16-24" swing.
Bench Lathes — 9" and 10" swing.
Toolroom Lathes — 10", 13", 14½" and 16" swing.
Turret Lathes — ½" and 1" collet — 9", 10", 16" swing.
Drill Presses — 14" Precision, Economy and Production models.
Shaper — 7" bench model with or without stand.
Accessories — for lathes, drill presses, shapers.

SOUTH BEND LATHE • South Bend 22, Indiana

If you write maker identify as **IEN - 9829**

Here's why EVERY shop needs *Porto-Power*

Right—10-ton hydraulic ram with pump and high-pressure hose.

Save up to 9 manhours moving a single machine! Do "1001" other tough jobs. No other equipment can do the work of low-cost "Porto-Power" remotely-controlled hydraulic jacks and attachments! 2, 4, 7, 10, 20 and 50-ton sizes. Buy from leading supply houses. Write for free catalog.
Blackhawk Mfg. Co., Dept. P-1593, Milwaukee 1, Wisconsin.

TOE-LIFT—Raise from a 1½" low. Replace crowbar methods.

PUSH, OVER ANY SPAN—Eliminate hazardous blocking up.

PULL PULLEYS, gears, wheels. No hammering or prying.

BEND PIPE and conduit the easy, profitable, fast way.

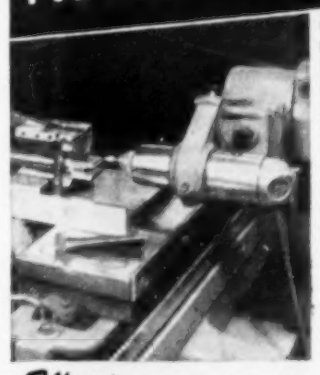
BEND RAIL. Straighten parts. Insert or remove bushings, pins, etc.

FREE BLUEPRINTS show how to build low-cost press for "Porto-Power".

BLACKHAWK

If you write maker identify as **IEN - 9830**

LOWEST COST PRECISION
FOR TOOL ROOM AND PRODUCTION



ONE PORTABLE MULTI-PURPOSE PRECISE GRINDER-MILLER WITH MACHINE TOOL MOUNT DOES THE WORK OF A SINGLE-PURPOSE MACHINE COSTING 100 TIMES AS MUCH!

Little can be done today to reduce labor and material costs. For substantial savings employ new, better techniques. Mount PRECISE Grinder-Millers on lathes, drill presses, milling machines and other machine tools or use in special production set-ups. ¼ HP; speeds from 20,000 to 6,000 r.p.m.; 115 volts, AC-DC. Ruggedly built for continuous duty. All metal housing; rigid PRECISE quill; sealed micro-precision bearings. *High speeds and accurate PRECISE quill and chuck are ideal for tungsten carbide cutters.* PRECISE will grind, mill or finish any material from soft wood to the hardest alloy steel.

Write FOR NEW CATALOG

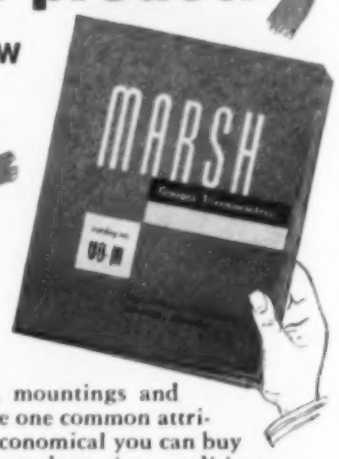
PRECISE PRODUCTS CORP., 1326 Clark St., Racine, Wis.

Precise **GRINDER-MILLERS**

If you write maker identify as IEN - 9831

The right gauge for your product

...is in the new MARSH CATALOG

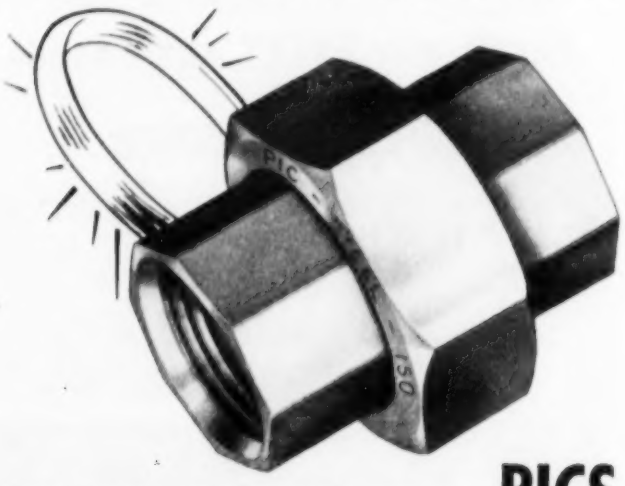


Turn the pages of this catalog, and you'll know why the most discriminating manufacturers equip their products with Marsh instruments.

Hundreds of types, styles, mountings and ranges are covered; all share one common attribute . . . the best and most economical you can buy for a given set of design and service conditions.

MARSH INSTRUMENT CO., Sales affiliate of Jas. P. Marsh Corporation, Dept. A, Skokie, Ill. *Export Dept.*, 3501 Howard St., Skokie, Ill.

If you write maker identify as IEN - 9832



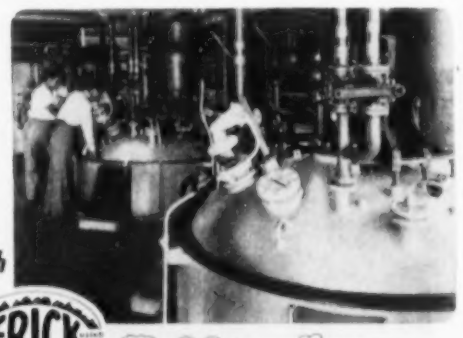
WED YOUR NEW EQUIPMENT TO PICS *for a Happy Union!*

PIC STEEL UNIONS blend perfectly with appliances because they're bright, gleaming, good looking. Functionally they're strong—ends are heavy steel pipe coupling stock, uniformly flat-sided for rapid installation with open end wrenches. Special wedge type bronze seat gives tight, safe closure. 100% zinc plated (including threads) to protect against rust. Pics are priced right — less than a galvanized, no more than a black malleable union!

For 150 lb. service — write for FREE Samples
DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN - 9833

Synthetic Rubber Industry Increases Output with



FRICK

Refrigeration

Reactors Cooled with These Frick Coils Make Rubber Twice as Fast.

The big plants making synthetic latex at Baton Rouge, La., Naugatuck, Conn., Louisville, Ky., and Borger, Texas, have lately installed special Frick cooling systems for holding critical temperatures in reactors—in such remarkable fashion as to more than double their output! The advantages of "cold" rubber are thus made more available to everyone.

Whatever the cooling problem—air conditioning, ice making, quick freezing or process work—you can rely on Frick refrigeration to solve it with dependability.

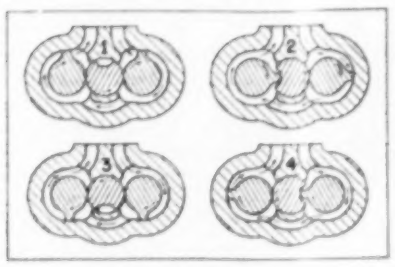
Frick Branches and Distributors are in principal cities throughout the civilized world.

FRICK CO. WAYNESBORO, PENNA. U.S.A.

If you write maker identify as IEN - 9834

PUMP . . Rotary hydraulic operates also as a reversible motor

Source: OLIVER IRON & STEEL CORP.
1018 Oliver Bldg., Pittsburgh 22, Pa.



Ask for technical data

Series 32-10 is a new larger design of the Rotodraulic pump, or hydraulic motor, previously described IEN-3415-52. Displacement is 60, 120, and 180 gpm. at 1,000 lb. in continuous operation in pumping duty. It rates to 300 hp. and 19,000 in. lb. of torque when employed as a hydraulic motor at 1,100 rpm. Gears are built into the pump assembly for direct connection to electric motors operating at 472, 760, or 1,200 rpm. Belt or chain drive can be specified.

Operation is by three gear connected rotors that make rolling contact in a straight line in the pump housing. Fingers on the two outer rotors provide the pumping action, or the driving means when operating as a hydraulic motor. An indentation in the center rotor passes first one and then the other of the fingers as shown in the four positions in the illustration. There is no pulsation.

If you write maker identify as IEN - 9835

FLOORS . . Grease resistant cement to surface a wood or concrete floor

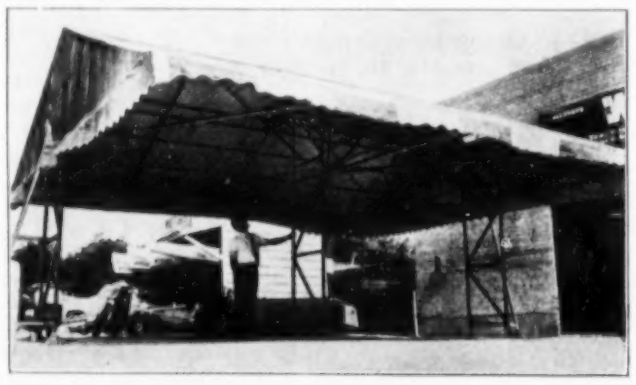
Source: UNITED LABORATORIES INC.
16803 Euclid Ave., Cleveland 12, Ohio

Several colors are available

Sylox trade names a new prepared material, ready for trowel application on a floor that requires protection against attack by grease or oil. Application is made to an average depth of about ½ inch. The company ships just enough to cover a specified area.

If you write maker identify as IEN - 9836

Standard members, made of steel by Unistrut Products Co., 1011-15 W. Washington Blvd., Chicago 7, Ill., have been as-



sembled into a tent supporting structure for use as a quickly erected or takedown unit out of doors.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9837

SPEED PRODUCTION • CUT COSTS ELIMINATE SHRINKAGE...

Investigate the *Joyal*

Resistance Spot Welding & Soldering Machines

Models 1000 WV, 2000 WV & 5000 WV–AC only

For hard soldering, soft soldering and spot welding precious and dissimilar metals. Spot welds steel parts up to 3/16 of an inch thick; welds brass up to .080"; solders brass up to ¼ of an inch. Has myriad applications in small metal parts production.

Write for catalog of complete line.

JOYAL PRODUCTS, INC. 56B BELMONT AVENUE NEWARK 3, N. J.

If you write maker identify as IEN - 9838

AA-267

IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachines

If you write maker identify as IEN - 9839

THE *Sutton* MOTOR DRIVEN PRESSURE BLOWER

THREE SIZES
¼, ½, 1 H.P.

USE FOR
- EXHAUSTING DUST SMOKE FUMES VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6". **WRITE FOR LITERATURE AND PRICES.**

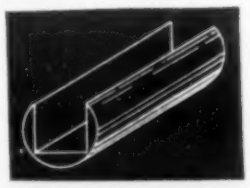
Sutton *Manufacturing Corp.*
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN - 9840

Lower TOOLING COSTS WITH SLOTTED SLEEVES

An Easy Method of Installing Tool Bits In Boring Bars, Tool Holders and Cutter Heads

No longer is it necessary to spend hours in filing square or rectangular holes when installing tool bits in boring bars, tool holders and cutter heads. With "Novi" Slotted Sleeves, a hole is reamed to fit the sleeve. Then drill and tap two holes one to hold the tool in place and the other for adjustment. All done in a matter of minutes!



Made in sizes for tool bits 3/16" to 1" square.

Some Territories Open to Distributors:

Write for Literature

NOVI TOOL & MACHINE CO.
25806 Novi Road Novi, Mich.
H56

Novi SLOTTED SLEEVES

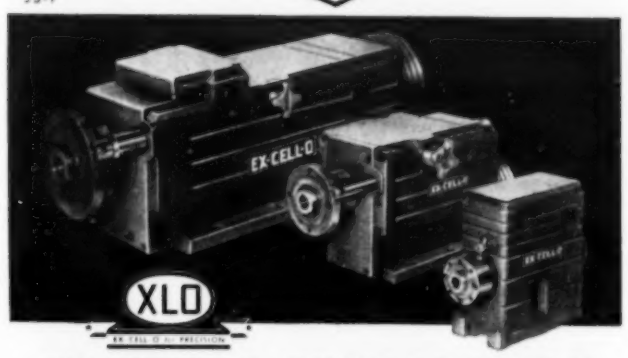
If you write maker identify as IEN - 9841

EX-CELL-O HYDRAULIC POWER UNITS

For Special Purpose Machines

Ex-Cell-O Quill-Type Hydraulic Power Units provide a compact, flexible source of power for feeding, rotating and retracting cutting tools. They are especially suitable for automatic drilling, reaming counterboring operations. Three standard units are available—styles 28-A, 21 and 20, shown below. For full information send for Bulletin 45828.

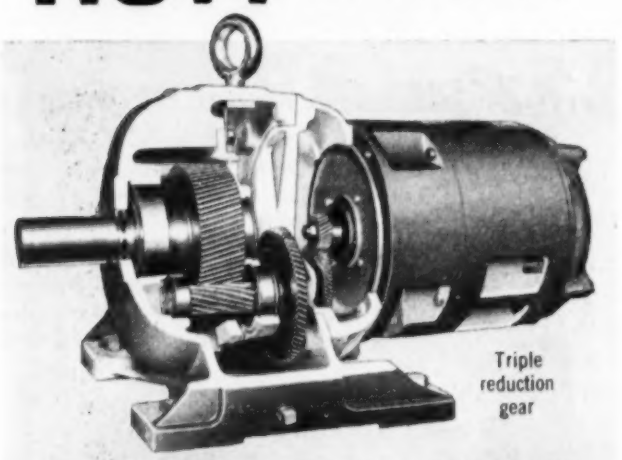
53-9



EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

If you write maker identify as IEN - 9842

NOW ...Simplify Your Motor Drives ...and SAVE!



Here's BUILT-IN SPEED ...to Fit Your Need

WITH A COMPLETE, NEW LINE OF

Century Gearmotors

equipped with

"Duti-Rated" PRECISION GEARING

Now you can profit by the advantages of more compact, safer and simpler motor power transmissions...with rugged Century **GEARMOTORS** to match the operating speed of your equipment.

This new Century line offers a wider-than-ever choice of:

BUILT-IN SPEEDS
MOTOR OPERATING CHARACTERISTICS
FRAME PROTECTION
HORSEPOWER RATINGS . . . 1 to 15 h.p. with Duti-Rated Precision Gearing . . . and fractional gearmotors from ⅛ to ¾ h.p. are also available. Larger ratings can be furnished if required.

Write For Complete Information

CENTURY ELECTRIC COMPANY
Saint Louis 3, Missouri

820A

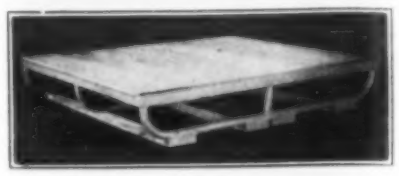
Century Motors

Offices and Stockpoints in Principal Cities

If you write maker identify as IEN - 9844

HANDLING . . Steel frame pallet, hardwood deck requires no fasteners

Source: ECONOWELD COMPANY
515-A Callahan Bldg., Dayton 2, Ohio



Patent applied for

The deck boards, in this new Type-555 pallet, assemble on a 1-in. angle iron support that forms an integral part of the welded frame and tubular steel runners. They ride under inverted side angles where a Deckboard lock holds them in place but permits removing them by hand without tools.

The bottom boards are nested in rectangular steel pockets welded to the ¾-in. runners. The assembly is available in specified sizes, heights and load capacities. A pallet measuring 40 to 48 by 4 in. lists at $8.40 in a minimum of 25 units.

If you write maker identify as IEN - 9845

HEATING . . Electric hot plate rates 660 watts on 115 volt ac. input

Source: LINDBERG ENGINEERING CO.
2444 W. Hubbard St., Chicago 12, Ill.

Utility unit

Pyrodise is a new portable hot plate with an 8-in. circular top and base and a control switch that provides several degrees of heating action. The top plate is made of aluminum. It can be brought up to 750 deg. F., from room temperature, in about 35 minutes. Variation between one point of control and the next is "stepless". An extension cord and plug are standard equipment.

If you write maker identify as IEN - 9846

PROTECTING . . Plastic apron, inert to fats, acids, oil, wipes clean

Source: UTILITY APRON CO.
51-55 W. Jackson Blvd., Room 560, Chicago 4, Ill.

$3.50 to $4.95

Durawear trade names the new plastic fabric used in manufacture of the company's apron. It is available in standard and extra-heavy white, plain or with a bib. It is supplied also in extra heavy black with the bib.

The material has mechanical strength, is resistant to scuffing and tearing. It is impervious to water, resistant to acids, mildew, fats, oils. It will not crack or peel and is soft to the touch. Stains, foreign matter, can be wiped off with a damp cloth.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9847

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

LIQUIDS • OILS • POWDERS • PASTES

COMBINED LIQUIDS AND SOLIDS

1/500 oz. to 2 pounds
20 to 70 Per Minute
Up to 750° F.

SAVE TIME AND MONEY WITH THE MATEER ALL ELECTRIC FILLING HEAD

Totally enclosed, manual or automatic. Accuracy as close as ±½%. Synchronize this self contained filling head with existing production lines and processing systems.

Jacketed and electrically heated hoppers available for handling cold or hot materials up to 750° F.

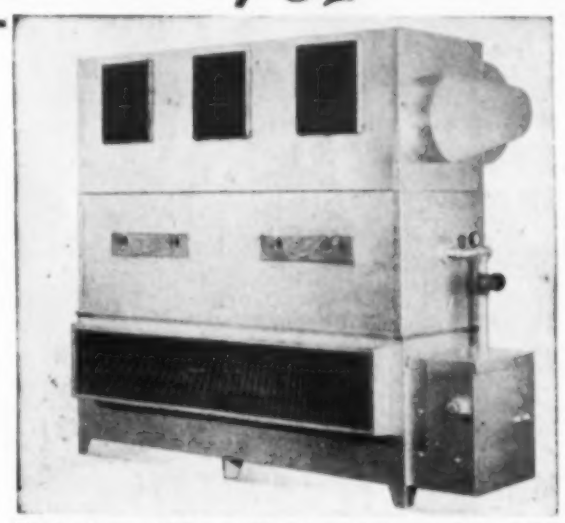
Hot waxes, insulating compounds and asphalts handled without difficulty.

Send full information and samples of material to be tested. Write Dept. 106 for fully illustrated bulletin.

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

If you write maker identify as IEN - 9848

EFFICIENT CLOSED SYSTEM COOLING! "Buffalo" EVAPORATIVE WATER COOLERS



Here's clean, positive cooling of cutting oils, diesel jacket water, and many types of machinery with either indoor or outdoor installation. Liquid passes through closed system of spiral fin coils on which spray evaporates. Yet, cost is low, very little makeup water is used, and minimum space required.

Write TODAY for all the facts on "Buffalo" Evaporative Water Coolers.

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ontario
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 9849

QUALITY DRI-SEAL PIPE PLUGS

A dependable source for Dri-Seal Pipe plugs. Most sizes shipped from stock. Prices available on any size or quantity.

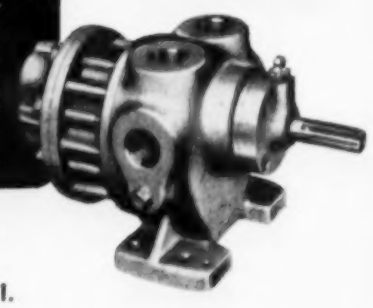
Write to...

LISLE Corporation
CLARINDA, IOWA
Makers of LISLE Magnetic Plugs

If you write maker identify as IEN - 9850

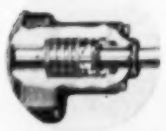
ROPER SERIES F

WITH 4-PORT DESIGN FOR 8 OPTIONAL ARRANGEMENTS



PUMP CLEAN LIQUIDS OF ALL KINDS AT PRESSURES TO 300 P.S.I. . . . 1 to 300 G.P.M. SIZES

Pumps that give *positive power* for hydraulic circuits. Installation time and design problems reduced because 4-port feature offers eight optional piping arrangements (4 for CW and 4 for CCW rotation). Supplied with or without relief valve . . . with packed box or mechanical seal.



Mechanical Seal
Ideal where repacking is not convenient.

Send for Catalog
GEO. D. ROPER CORP.
209 Blackhawk Park Ave.
Rockford, Illinois

ROPER *Rotary Pumps*

If you write maker identify as IEN - 9851

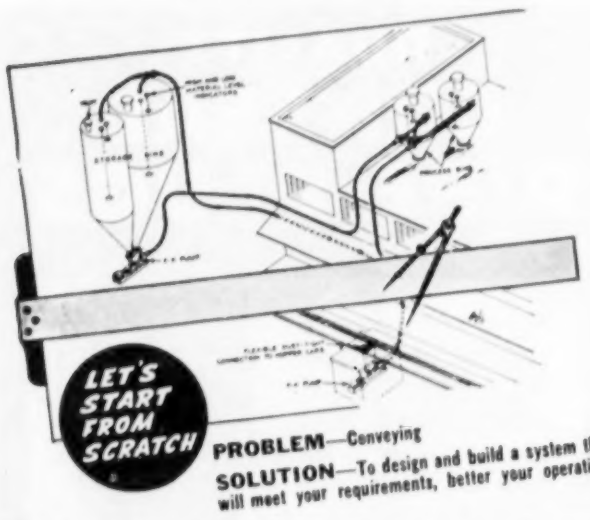
Lined with pure Tungsten Carbide (BORIUM).
Outlasts 300 ordinary cast iron nozzles.
Holds orifice size.
Retains high velocity, cleaning ability.
Saves compressed air.
Resists cutouts.
Eliminates frequent changes.

Guaranteed 300 HOURS when cleaning with sand, most common abrasives.

Standard screw and flange types. Special types made to order. Send blueprint and write for folder.

STOODY COMPANY
11930 East Slauson Avenue, Whittier, California

If you write maker identify as IEN - 9852



Fuller Company designs and manufactures four primary types of pneumatic conveying systems for dry pulverized and granular materials. This permits the selection of the system best adapted to specific requirements—best equipped to handle most efficiently the materials being conveyed.

Each job is considered separately. That's why we say "Let's start from scratch" . . . when the plant is in the design stage. Then a preliminary study of local conditions can be made—and the proper equipment and layout recommended by specialists in the field of pneumatic conveying. We strongly urge all prospective purchasers to avoid preliminary engineering and to permit us to submit a recommendation or engineering study.

Fuller has a tangible resource in a personnel with many years of experience in all phases of pneumatic conveying. Fuller engineers are at your service to make a study of your requirements and to make a recommendation. There is no obligation, of course.

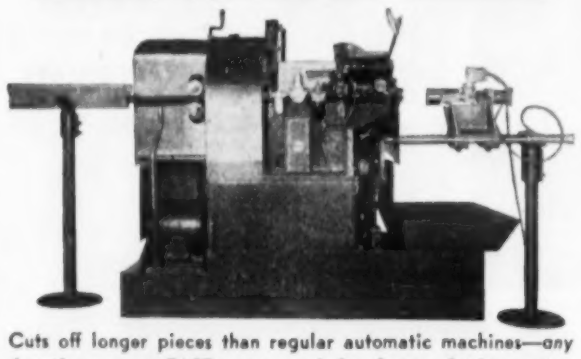
G67A

Fuller

FULLER COMPANY, Catasauqua, Pa.
120 S. La Salle St., Chicago 3
420 Chancery Building, San Francisco 4

If you write maker identify as IEN - 9853

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machines—*any length you want.* FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing Cuts and Chamfers both outside edges of ½" .030 wall tubing, 5" lengths, every 2.5 seconds.

1¼" Cold Rolled Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

4" THREADED STUDS

These popular time saving machines are now available in 4 sizes, handling work up to 6¾" O.D.

Cut and chamfered at one time — in 8 Sec. — from 10 ft. length of stock already threaded (¾" U. S. Standard). Clean cut. Clean chamfer. Nuts start easily with no extra finishing required.

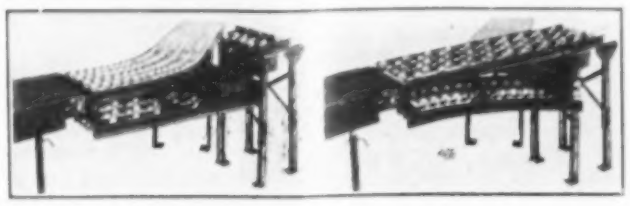
Write for Catalog

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as IEN - 9854

CONVEYING . . Switch section unloads or delivers to belt conveyor

Source: RAPIDS-STANDARD CO.
342 Rapistan Bldg., Dept. FS, Grand Rapids 2, Mich.



For reversing action

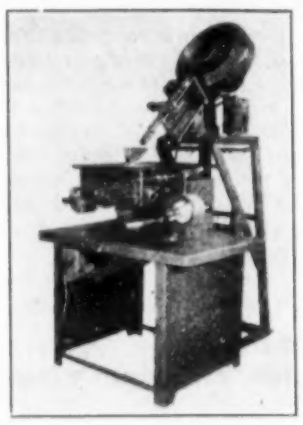
Flip Switch is a new wheel section. It assembles at the end of a reversible belt conveyor to deliver by gravity over a curve leading to a gravity wheel conveyor line or to receive, also by gravity, from a second higher wheel conveyor line carrying loads back to the belt conveyor. Installation includes a stop mounted in the gravity line leading to the belt conveyor to hold loads back until the switch is in correct position.

The equipment was designed originally for application in a warehouse to take loads away from the main belt and to bring them back to the belt for reverse movement. The unit is available for use with an 18-in. wheel conveyor width.

If you write maker identify as IEN - 9855

PACKAGING . . Heat sealing machine makes package around small products

Source: PAK-RAPID INC.
528-32 N. 21st St., Philadelphia 30, Pa.



Automatic to order

Feed attachment has been developed for use with the company's Auto-Pak machine, previously described IEN-4177-53. The feeder handles small hardware, electrical and similar products; for delivery into the machine which forms two sheets of heat sealing material around each product, seals the four sides, cuts off and delivers a sealed package.

Cellophane, foil, glassine, heat sealing kraft can be used. Production rate is about 60 filled packages per min., ranging in size from 1 by 1 by ½ in. to 6 by 6 by ½ inch. Operation is on 110-volt ac. The machine measures 2 by 3 by 3 ft. and is driven by a ¼-hp. motor. The attachment mounts at the rear to feed by gravity.

If you write maker identify as IEN - 9856

LIGHTING . . Installation instructions on explosion-proof incandescent fixture in new bulletin

Crouse-Hinds Co.
7th North & Wolf Sts., Syracuse 10, N. Y.

Sequence pictures are used in new 4-page Bulletin SEC-K to illustrate description of how to install the company's explosion-proof and rain-tight lighting fixtures. A second set of pictures shows how to relamp the fixture.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9857

Here's why it pays to use BRISTOL'S SOCKET CAP SCREWS

- easier, faster setting for speedy assembly
- greater holding power, shock and vibration-resistance
- they permit more compact design, with smooth, flush surfaces for safety and streamlining

No delivery problem—adequate stock is always on hand to fill orders without delay. Write today for your free copy of Bristol's 40-page socket screw catalog. A.3.7

BRISTOL'S SOCKET SCREWS

THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN - 9858

INDIVIDUAL VULCANAIRE DUST COLLECTING UNITS

Are used on surface and other grinders where grinding dust must be removed.

Inexpensive, compact units, with no moving parts. Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

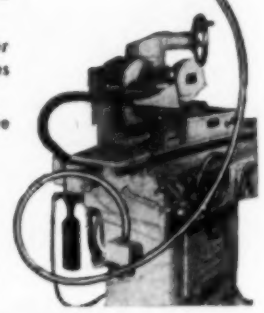
The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. This mounting permits constant contact with dust as the wheel is moved up or down.

A simple needle valve operates the unit, and can be shut off whenever the machine is not in use.

Available in two sizes: 700 series for grinding wheels 7" dia. or less—200 series for wheels 2" dia. or less.

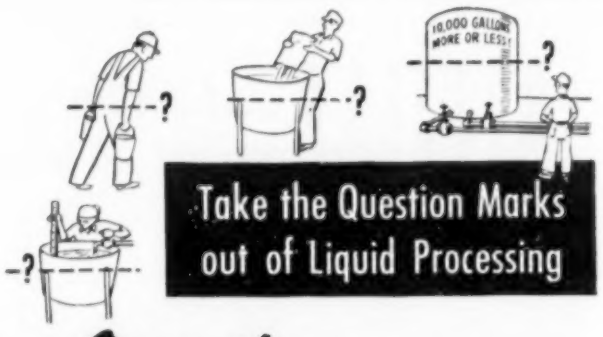
Made by the makers of Vulcanaire *The* Big grinding attachment.



Write on your letterhead for "Dust Collector" Booklet.

VULCAN TOOL CO.
734 LORAIN ST., DAYTON 10, OHIO

If you write maker identify as IEN - 9859

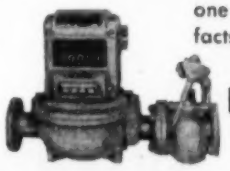


Take the Question Marks out of Liquid Processing

WITH *Accurate* NEPTUNE METERS

Why use *wasteful* methods when accuracy is so *easy*? End spoiled batches, overfilling, spillage . . . eliminate slow weighing . . . with simple, dependable Neptune meters.

AUTOMATIC BATCH CONTROL: Ask to see the new Neptune "432" Auto-Stop—the meter that makes batch mixing *automatic*. It's just one of *many* Neptune liquid meters. For quick facts, ask for copy of Bulletin 566-JI.



NEPTUNE METERS for 100 Industrial Liquids

NEPTUNE METER COMPANY
50 West 50th St., New York 20, N. Y.

Branch Offices ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER • NO. KANSAS CITY, MO. • LOS ANGELES • LOUISVILLE • PHILADELPHIA • PORTLAND, ORE. • SAN FRANCISCO

If you write maker identify as IEN - 9860

New Universal Radial Hole-Drilling Machine

A Standard Machine Designed for Variety Production

Why build a special machine for drilling radial holes when a standard machine equipped with Govro-Nelson Automatic Drilling Units will, in many cases, perform the work of a special machine that would cost considerably more!

Any number of drilling units up to eight may be employed, the units being movable not only through 360 degrees on the circular table but also movable endwise on riser plates.

The machine may also be used for tapping operations with Govro-Nelson Tapping Units. It has a range of 1/32" to 3/8" on drilling operations and 0-80 to 3/8-16 on tapping operations, depending on material and spindle speeds. Literature on request.

GOVRO-NELSON CO.
1933 Antoinette
DETROIT 8, MICH.

***Automatic* DRILLING UNIT**

If you write maker identify as IEN - 9861

Dependable POWER

Sarkes Tarzian

"Centre-Kooled"®

PATENTS NO. 2616692 & 2620364

SELENIUM RECTIFIERS

Fourteen cell sizes . . . one million combinations

What's yours? Write, wire or phone

Sarkes Tarzian, Inc., Rectifier Division, Dept. B5, 415 N. College Ave. Bloomington, Indiana

In Canada: 50 St. Clair Ave. W., Toronto

If you write maker identify as IEN - 9862

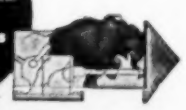
BOOST OUTPUT with *Impact* AIR HAMMER

the efficient modern method for

PUNCHING . . . . RIVETING
ASSEMBLING . . EMBOSSING
FORGING . . . . . FORMING
PEENING . . . . . MARKING
CRIMPING . . . . . CUTTING
BLANKING . . . . . COINING

Ready . . . Mead's new air-powered Impact Hammer . . . weighing only 27 pounds . . . yet having a wallop like a pile-driver! One of its outstanding applications is multiple piercing of large metal sheets before or after forming. It can punch holes as close together as 1¾" on centers. Value of the impact readily adjusted from 4,500 pounds down to only a few ounces. Set ups are quick, easy. Besides innumerable punching operations, with suitable attachments, it is capable of upsetting rivets, blanking out soft materials with knife dies, light coining, forging operations, etc. Get complete facts on this versatile, handy new tool and other Mead Air Power devices. Write for Catalog.

MEAD AIR OPERATED DEVICES *save precious man-hours!*



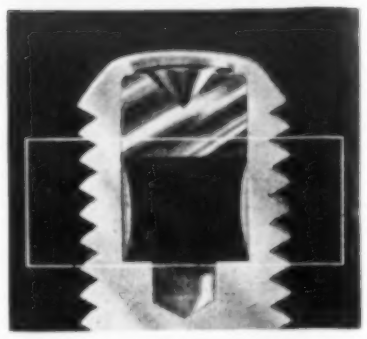
CATALOG READY
Send for copy of our new Air Power Catalog Illustrating, describing many new man-and-money-saving devices.

MEAD SPECIALTIES COMPANY
4114 NORTH KNOX AVENUE
DEPT. EA-93 • CHICAGO 41, ILL.

If you write maker identify as IEN - 9864

BEARING . . Cushioned jewel for shock duty in meters, instruments

Source: RICHARD H. BIRD & CO.
3 Spruce St., Waltham 54, Mass.



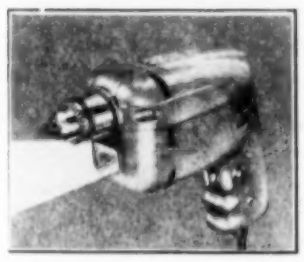
To your order

Jewel sizes range from 0.050 to 0.075 in. in this new cushioned bearing. Mounting screws range from 0.280 to 0.490 inch. Beneath each jewel, in its mounting screw, is a resilient cushion of silicone rubber. The rubber remains serviceable in a temperature range from minus 85 to plus 325 deg. F. The company is prepared to quote on special sizes, beyond the limits named, on quantity order from a prospective user.

If you write maker identify as IEN - 9865

DRILLING . . Portable electric tool mounts work light, rates ¼ inch

Source: FAIRCHILD INDUSTRIES
108-12 Main St., Burlington, Vt.



About $30

Work-Lite trade names the companys new ¼-in. portable electric drill because of the work illuminating light that is mounted in the housing end. The spindle is fitted with a Jacobs gear type chuck and is driven by a universal motor at free speed of 2,000 rpm. Full load speed is 1,000 rpm. Operation is on 110 volts. The housing is die cast aluminum. A ball thrust bearing on the spindle takes the work load.

If you write maker identify as IEN - 9866

SHEARING . . Rubber centers for circle cutting on company's machine

Source: AMERICAN PULLMAX CO.
2453-57 N. Sheffield Ave., Chicago 14, Ill.

No marks on work

New centers, made of rubber and free to rotate, have been developed for the company's reciprocating shearing machine, previously described IEN-3215-52. The centers clamp on the bottom and top surfaces of the work. They can be adjusted on the machine ways for various work diameters. The machine will shear mild steel to 1½ in. in thickness. The centers can be released to permit straight cutting or irregular outline work to follow a scribed pattern.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9867

CONSULT P-S FOR THE BEST *Materials* HANDLING EQUIPMENT

BARREL TRUCK
It Loads Automatically
Three style wheels: metal, rubber on metal and pneumatic. Capacity 1000 lbs. 22" wide for narrow openings. Weight 85 lbs.

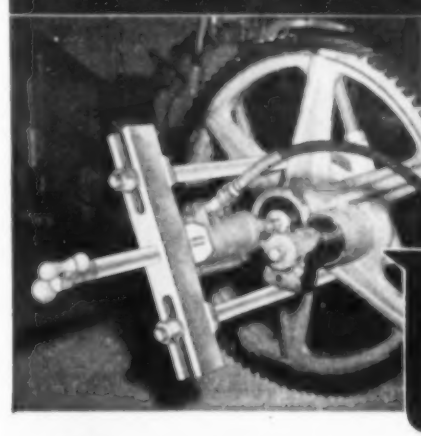
Automatic END DUMP
Ideal for handling and dumping of sand, scrap, castings, stampings and other heavy materials. Locks during loading by safety catch. Built for lift or fork truck or with casters. All welded construction. Standard size ½, 1 and 1½ yds. capacity, other sizes on request.

When Ordering—Always give "item" number. All prices are f. o. b. Detroit. Prices are subject to change without notice. Write for Catalog.

DESIGNED AND MANUFACTURED BY
Palmer-Shile Co.
16009 FULLERTON AVE., DETROIT 27, MICH.

If you write maker identify as IEN - 9868

PUSH . . . PULL 75% FASTER 90% EASIER



WITH THE CENTER HOLE OTC

50 TON HYDRAULIC PULLER

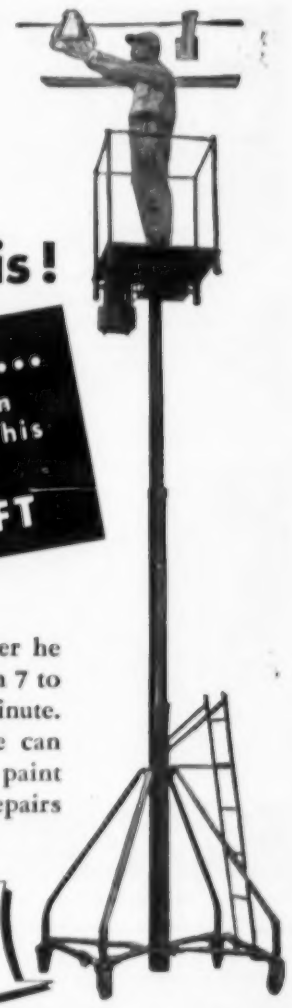
Removes or installs bearings, gears, pinions, shafts, studs, wheels, pulleys, etc.—75% faster and 90% easier. This new OTC 50 ton ram is completely portable (weighs only 45 lbs.)—has remote control pump—interchangeable ram heads—and can be used as a production holding fixture. Also available in 17½ and 30 ton sizes. *Booklet describes complete line and uses of OTC equipment.*

WRITE FOR FREE BOOKLET

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINN.

If you write maker identify as IEN - 9869

He's up where the work is!



17 feet high... and got there in 25 seconds with his SAFWAY MOTO-LIFT

With a flick of his finger he raised this platform from 7 to 17 feet in less than ½ minute. Now he's up where he can work on ceiling lights, paint or make time-saving repairs on equipment.

HERE'S HOW MOTO-LIFT GETS YOU TO HARD-TO-REACH PLACES *Quickly!*

- Moto-Lift raises 400 lbs. to 17 feet. Yet it is light and easy to use. Strong steel platform and all-steel tubular construction last a lifetime of hard use.
- Moto-Lift raises up to 50 times on one battery charge. No need for an electrical outlet. And battery recharge is a low-cost overnight job.
- Moto-Lift lowers safely in 10 seconds. An ingenious mechanical brake safely locks the telescoping tube if the power fails. Guard rails are safety code approved.
- Moto-Lift telescopes compactly to clear narrow doors. It's light enough to move quickly and easily. Compact for storage in out-of-the-way places.

No doubt about it. Dollar for dollar, Moto-Lift will outlast and outperform any other maintenance tower you can mention. For more facts write today. Or contact one of the 137 Safway dealers near you.

Write for this Free Bulletin

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as IEN - 9871

"BIG SAVINGS OF LABOR AND MATERIAL"

with portable Greenlee Hydraulic Conduit Bender

Quickly produce your own conduit bends *right on the job*. With a GREENLEE Bender *one man* in but a few minutes makes smooth, *accurate* bends in pipe up to 5", rigid and thin-wall conduit. Many owners report time and labor savings from 50% to 90% . . . and cost of many manufactured bends and fittings completely eliminated. Get facts now on this tool that often pays for itself on the first job.

FREE BENDER BOOKLET with complete data on GREENLEE Benders for pipe, conduit, tubing. Write today, Greenlee Tool Co., 1869 Herbert Ave., Rockford, Illinois.

If you write maker identify as IEN - 9872

WILL YOUR PLANT STAND A WHITE GLOVE INSPECTION ?

Model 218

This idea may sound far fetched — but it's straight facts that the clean plant, shop or office will have the best chance of landing defense orders.

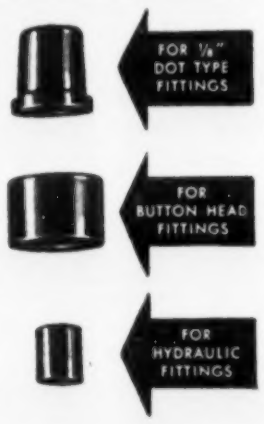
Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN - 9873

Keep Lubrication Fittings Clean



Here's a tip that will help cut maintenance costs and prolong bearing life . . . use these inexpensive flexible plastic caps on your lubrication fittings. They'll keep the fittings free from the dirt and grit that's often forced into the bearings when the grease gun is applied. The caps can be slipped on and off with ease — and once on, won't shake loose. They're also unaffected by oil, grease or water.

Sizes for Hydraulic, Button Head or 1/8" Dot Type Fittings. Order a supply.

THE S.S. White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 9874

PIPE . . Rigid extruded plastic and fittings, in 1/2 to 4 in. sizes

Source: ALPHA PLASTICS INC.
12-16 Northfield Road, West Orange, N. J.

Available from stock

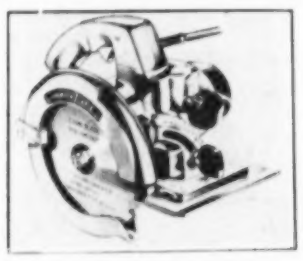
Alpha Forty is a new special polyvinyl chloride plastic employed in manufacture of a new line of rigid plastic pipe and tube in nominal pipe size from 1/2 to 4 inches. The pipe is stocked in 10 and 20-ft. lengths and in standard and extra heavy weights. Threaded or sleeve type fittings are available in sizes from 1/2 to 2 inches. Larger sizes are fabricated to order. Styles include standard tees, 45 and 90-deg. elbows, nipples, plugs, couplings, blind and companion flanges.

The pipe is unaffected by alkalis, acids, salts, oxidizing agents, oils, grease, alcohols, gasoline, carbon tetrachloride at ordinary temperatures. Heat distortion occurs above 165 deg. F. Ultimate tensile strength is 7,000 lb. per square inch. Flexural strength is 13,000 lb. per square inch.

If you write maker identify as IEN - 9875

WOODWORKING . . Portable saw, universal motor, takes 7 in. blade

Source: PORTER-CABLE MACHINE CO.
24 Exchange St., Syracuse 8, N. Y.



List is $75

Model 115 designates the company's new Contractor's Special general purpose portable electric saw. It can be set to cut through 2-in. stock at 90 deg. or to bevel cut 2-in. dressed lumber at 45 degrees. It weighs 12½ lb., measures 11 in. in length.

The telescoping guard moves into the cut without dragging. It is pulled back by moving a finger control lever. Assembly includes bevel and depth adjustments on a die cast aluminum frame equipped with a center balanced hand grip and a trigger switch. A portable rigid steel table, weighing 42 lb., can be specified to convert the saw into a table type machine. The saw mounts beneath the table with its blade facing upward through a slot. A radial arm table is available also.

If you write maker identify as IEN - 9876

RESEARCH . . Current activity in engineering colleges summarized by 330-page book

Engineering College Research Council
Pennsylvaina State College, State College, Pa.

Research programs in progress at member colleges are reported in "Review of Current Research," a book that lists at $2.50. It summarizes about 7,500 research projects in 103 engineering schools, includes a 5,000-entry index.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9877

FRICTION-FREE DeZURIK VALVES

DeZurik Easy-Operating Plug Valves offer 100% friction-free service on any line. In opening the valve, the slightest movement of the lever lifts the rubber plug-face entirely free of the eccentric valve seat; completing the quarter-turn swings the plug out of the way — smoothly, easily, WITHOUT FRICTION! The plug-face does not come into contact with ANY PART of the valve body except at the moment of closure. No friction means no binding or scoring; there's no lubrication needed, and virtually no maintenance. Get the complete story on DeZurik Easy-Operating Plug Valves in all sizes and metals. Write for data.

DeZURIK SHOWER CO.
SARTELL, MINNESOTA

If you write maker identify as IEN - 9878

ARMSTRONG *Drop Forged* LATHE DOGS

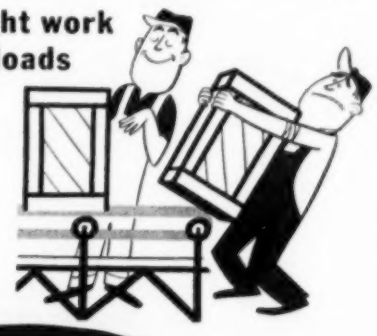
ARMSTRONG Lathe Dogs give extra service because they are drop forged from selected open hearth steel and are heat treated to extreme toughness and stiffness. Hubs are made large enough to permit re-tapping, screws are also of special analysis steel and are hardened at the point to prevent upsetting. ARMSTRONG® Dogs come in 10 types with square head or safety headless screws, with straight or bent tails. They are carried in stock by your local ARMSTRONG Distributor.

Write for catalog

ARMSTRONG BROS. TOOL CO.
5243 West Armstrong Avenue
Chicago 30, Illinois
New York and San Francisco

If you write maker identify as IEN - 9879

Makes light work of heavy loads



Quaker

CONVEYOR BELTING

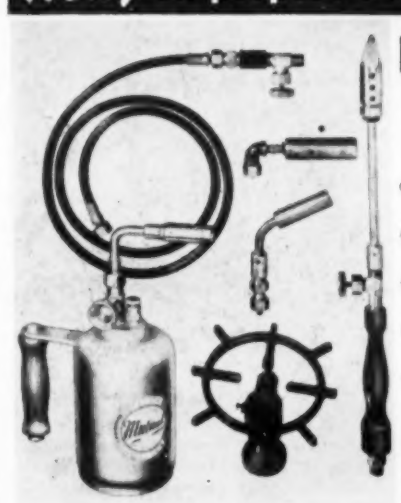
Takes shock loads! Withstands tension! That's Quaker Conveyor Belting for uninterrupted materials handling, when selected for the service required. Tough, non-slip rubber encloses uniformly tensioned plies of highest quality duck, friction impregnated. Whatever the job, Quaker is tops for the work intended. For superior service, maximum economy, buy Quaker quality.

Write for name of nearest Quaker distributor

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
Dept. E, Philadelphia 24, Pa.
Branches in Principal Cities

If you write maker identify as IEN - 9880

New! all purpose PROPANE TORCH



MUTUAL B-91

- PORTABLE
- LIGHT BRAZING
- SOLDERING
- SWEATING
- MELTING
- HEATS to 2300° F.
- ICC CYLINDER

PLUMBERS, TINNERS, LINESMEN, REPAIRMEN

Use PROPANE—hot, fast, clean, safe and most convenient fuel known. This MUTUAL B-91 Torch is ready for instant use. No pumping, priming or waiting. No dirty soot. Flame won't blow out. Easy and safe to light and adjust. Over 4½ hours continuous use in each cylinder. Variety of torch tips and burners available separately or as kit shown. Send TODAY for complete details.

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3600 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

If you write maker identify as IEN - 9881

It is vital to maintain QUALITY!

Please remember that felt is not just felt, but is an engineering material, which can and should be specified as closely as any other. It is obvious that glass-polishing felt must be different from cushioning felt, but there are finer distinctions which should be taken into account if satisfaction is to be assured.

American, the largest and oldest felt manufacturer, makes 700 different mechanical types, each having exactly-controlled characteristics. For any given application there is a specification felt that is right for the job. To select this felt and establish it as a standard is your assurance of satisfaction with your product or process.

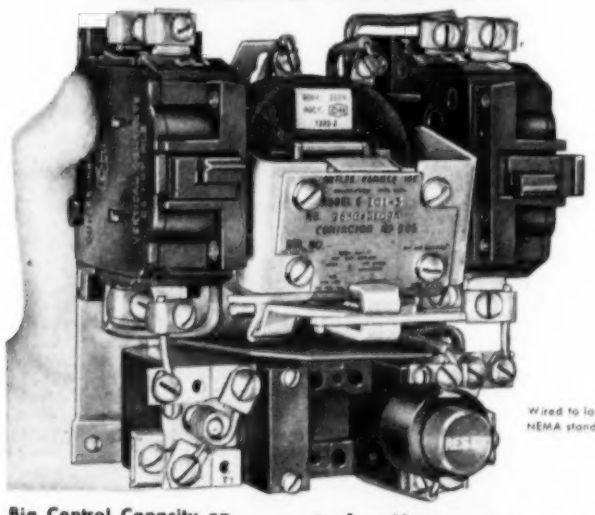
Like other materials, felt should be bought not on price, but on the quality required for a given application. If you will do that by adhering strictly to specifications and material standards you will find felt, American Felt, will serve you supremely well in protecting the reputation of your products. Our engineers will be glad to collaborate with you on establishing the correct specifications, and our mills will adhere strictly to those specifications when your order is received.

American Felt Company

GENERAL OFFICE: 18 GLENVILLE ROAD, GLENVILLE, CONN.

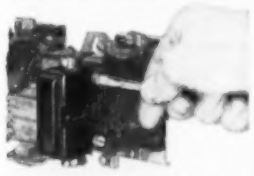
If you write maker identify as IEN - 9882

NEWS FOR MOTOR CONTROL DESIGNERS



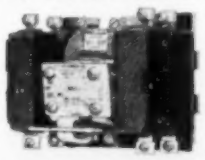
Wired to latest NEMA standards.

Big Control Capacity on Small Panel Area. NEMA Size 1 Compact Starter; 7½ HP. 440 V. Measures only 5.75" x 5.75" x 3.8"



Easiest-to-add Extra Interlocks. Only a screwdriver is needed; contactor or other parts not disturbed.

Three-Coil Overload Protection. Full 3-Phase protection without exaggerated space requirements and expense. 3-Coil relay shown here with 3-position switch and reset button.



Most Adaptable Control Relays. Two to six poles; dust-safe vertical contacts. Contacts can be changed from N.O. to N.C. or vice versa by simply inverting position. Circuit arrangement is always visible.

Cutler-Hammer ☆ ☆ ☆ Components Offer Many Desirable New Features

Electrical engineers everywhere today are quick to praise the spectacular new Cutler-Hammer ☆ ☆ ☆ Motor Control. The three stars stand for three entirely new standards in motor control performance and satisfaction . . . an entirely new standard in ease of installation . . . an entirely new standard in trouble-free performance . . . an entirely new standard in both electrical and mechanical life. These new standards are of great importance to machine design and control circuit engineers. Particularly, because they have been achieved with components of extremely small size designed to permit the closest possible grouping on panels. Panel spacing can be determined almost entirely by electrical considerations . . . extra dead space is not needed for the mechanics of wiring, adjusting, or even disassembling installed components. No other components offer such simple and complete flexibility; easy-to-add electrical interlocks, easy-to-change contact arrangements on control relays, three coil overload relays for full three-phase protection, etc. Write *today* for technical data sheets. CUTLER-HAMMER, Inc., 1378 W. St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER MOTOR CONTROL C-H

If you write maker identify as IEN - 9884

DISPENSING . . Food service cart carries food and coffee to the workers

Source: ANETSBERGER BROTHERS
182 N. Anets Drive, Northbrook, Ill.

For workers on job

Illustrated is one of three available designs of a new food service cart made of stainless steel. It is mounted on casters for movement through the departments in a plant. It permits bringing food and coffee to the workers on the job. Assemblies are available with heating elements for the food compartments and with plate racks. A food warmer unit holds standard pan inserts for meats, gravies, vegetables, rolls, buns, biscuits. Model 1, shown in the illustration, measures about 40 by 26 by 32 inches. The coffee urn measures 19 by 26 inches.

If you write maker identify as IEN - 9885

SOLDERING . . Non-corrosive flux for aluminum helps make solid joints

Source: EUTECTIC WELDING ALLOYS CORP.
40-42 172nd St., Flushing 58, N. Y.

Dry material non-hygroscopic

Flux 190NC is a new material for use in soldering aluminum. It removes oxides from the joint area, acts as a heat indicator by melting at the correct temperature for joining. It assists in smooth flow of the soldering alloy and helps produce deposits free from porosity. It lowers surface tension, provides good wetting action.

If you write maker identify as IEN - 9886

WRENCH . . Electric impact tool for production and maintenance use

Source: SNAP-ON TOOLS CORP.
8030 28th Ave., Kenosha, Wis.

Rates to 9/16 inch

Nut, stud, screwdriving, hole sawing, masonry drilling, stud removing are operations for which this new electric impact wrench can be applied. It measures about 10 in. in length by 3⅝ in. in diameter and is available for operation on 110 or 220-volt ac. or dc. It is characterized by rapidly recurring impact action in which 2,000 sharp blows are struck per min., after sufficient turning resistance has been set up to stop steady rotation.

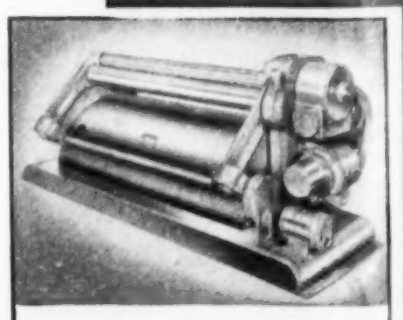
Reverse or direct rotation is set by turning a knob at the rear of the housing. Drive is at a ½-in. square nose which fits a standard socket.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9887

REED ENGINEERING COMPANY

→ Modern Metalworking Equipment



- BENDING ROLLS
- TURNING ROLLS
- AUTOMATIC WELDING FIXTURES

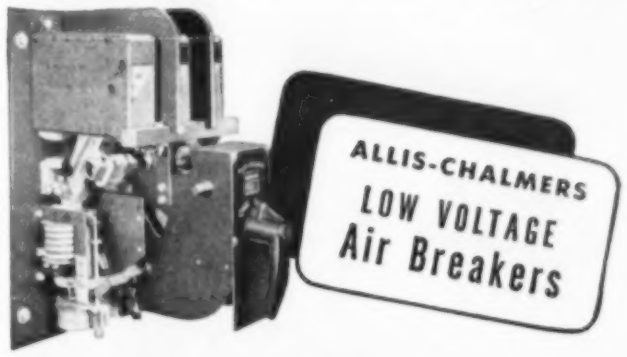
REED PLATE BENDING ROLLS

- ★ In 18 models, ranging from 3 ft. x 10 ga. to 8 ft. x ¼" in capacity
- ★ Rugged, all steel construction
- ★ Built-in, silent worm gear drive
- ★ Durable, special bronze bearings
- ★ Power adjustment & air drop end available on most models

WE INVITE YOU . . . to write us for specifications, prices, list of REED users near you. No obligation. Just write on your letterhead.

REED ENGINEERING CO. 1009 W. FAIRVIEW CARTHAGE, MO.

If you write maker identify as IEN - 9888



Get Wide Selection!

Whether you need open, drawout, or stationary enclosed units . . . with remote or local switching . . . there's an Allis-Chalmers low voltage air breaker for the job. These breakers are insensitive to shock and vibration under normal conditions and can be applied in any location.

Ratings are available to meet all low voltage applications. Interrupting capacities 25,000 and 50,000 amperes; continuous currents 35 to 1600 amperes; maximum voltage 600 volts, 25 to 60 cycles.

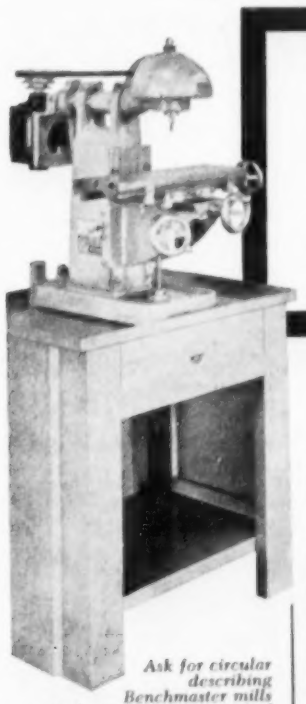
Get complete specifications from an Allis-Chalmers district office, or write Allis-Chalmers, Milwaukee 1, Wis.

A-4121

ALLIS-CHALMERS

If you write maker identify as IEN - 9889

If you write maker identify as IEN - 9890



Ask for circular describing Benchmaster mills and numerous accessories!
Benchmaster Manufacturing Co.
1835 W. Rosecrans Avenue,
Gardena, Calif.

benchmaster the *preferred mill* for small jobs!

4 models: vertical, horizontal, two production types.

Benchmaster is popular in every shop because it's a *real* time and money saver . . . takes *big, heavy cuts* for rapid metal removal, *mills vertically or horizontally* simply by substituting spindle assemblies, is *fast and easy on set-ups, saves thousands of dollars* over big-mill investments!

For small jobs you just can't beat a Benchmaster . . . low initial cost, high precision, power and extreme versatility make this the best dollar investment in your shop!

benchmaster

World's largest manufacturer of small punch presses and mills.

If you write maker identify as IEN - 9891

For HEAVY DUTY WORK! Severest Electrical Services

P-506-CE—Plug with Cap

S-506-DB
Socket with deep Bracket

JONES PLUGS & SOCKETS
500 SERIES
Proven Quality!

For 5,000 Volts, 25 Amperes per Contact Alterable by circuit Characteristics.

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10, and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized (*rust proofed*). Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

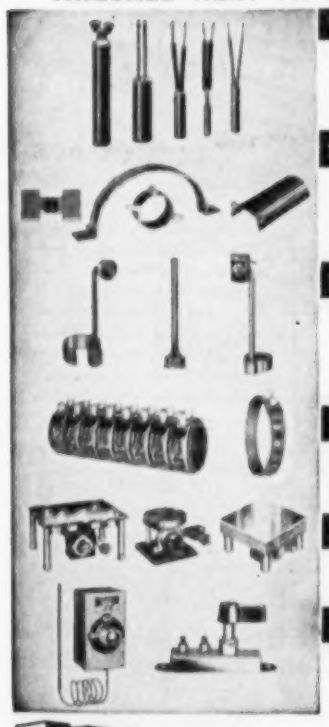
Write for Jones BULLETIN 19 for full details on line.

Send for complete data on this new basic improvement!

HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24 ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 9892

TAILORED HEAT for every Industrial Use



Watlow CARTRIDGE HEATERS
Flexible leads or rigid terminals. Diameters 3/8" to 1 5/16", lengths 1 1/2" to 20". Capacities 50 to 1500 watts.

Watlow STRIP HEATERS
Straight or curved design. Widths 3/4" and over, lengths to 72". Post, button and bracket type terminals and flexible leads.

Watlow IMMERSION HEATERS
Straight or curved. Diameter 3/4" to 2", lengths 6 1/2" to 67", capacities 150 to 10,000 watts.

Watlow CYLINDRICAL HEATERS
Patented clamping band. Widths 1 1/2" to 2", diameters 1 3/4" and up. Watt densities up to 45 watts / sq. in.

Watlow HOT PLATES
Polished steel heating surfaces. Portable or flush mounting 3-heat switch for 550°F. to 750°F.

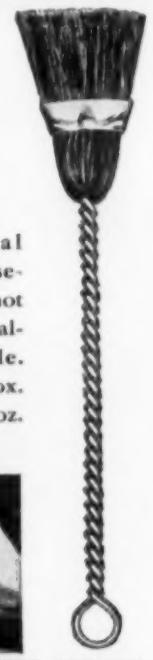
Watlow THERMOSTATS
Temperature range 100°F. to 550°F. Built-in double pole on-off switch. Capacities 125V, 35A, 4375 W; 250V, 25A, 6250 W.

WATLOW ELECTRIC MFG. CO.
Since 1922—Designers and Manufacturers of Electric Heating Units
1370 FERGUSON AVE.
SAINT LOUIS 14, MO.

If you write maker identify as IEN - 9893

Mechanic's Chip Brush

- Improved Design
- More Efficient
- Longer Lived
- Acid Resistant
- Alkali Resistant
- Lower Priced



● Genuine natural horsehair bristles securely locked, cannot pull out. 12 gauge galvanized wire handle. Packed 2 doz. per box. Price, $3.00 per doz. F.O.B. Rockford.

CLEANING T-SLOTS
APPLYING COOLANT
WRITE FOR CATALOG SHEET

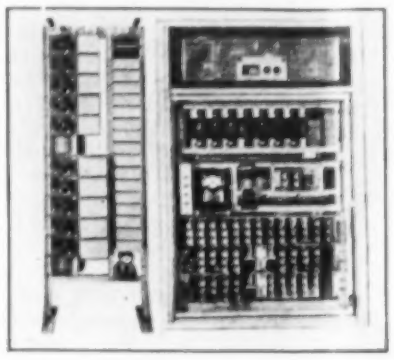
STANDARD AND SPECIAL TWISTED-IN-WIRE BRUSHES
—ONE BRUSH OR A CARLOAD—

SEE YOUR MILL SUPPLY DEALER OR WRITE
Biltwell Brush Co.
225 S. CHURCH ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 9894

COMMUNICATING . . Telephones and switchboard, 10 to 50 line units

Source: CONNECTICUT TELEPHONE & ELECTRIC CORP.
72 Britannia St., Meriden, Conn.



No operator required

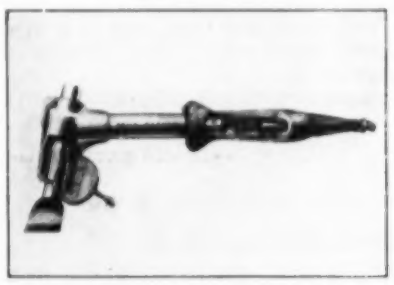
Private Line is a new assembly of telephones and automatic switchboard equipment for 10 to 50 lines. It can be expanded to 5,000 lines or more. The company is also announcing a new low cost 2 to 5-line installation designed for small businesses and known as the Direct-A-Call. This can be installed by the user.

The telephones for both installations are made of molded Hercocel plastic in colors to harmonize with office surroundings. The Private Line equipment provides for executive priority, voice paging, conference facilities, group hunting and automatic ringing.

If you write maker identify as IEN - 9895

SOLDERING . . Electric iron with element sealed in aluminum head

Source: PAUL C. ROCHE CO.
11 Park Place, Dept. N, New York 7, N. Y.



Made in Germany

Zeva trade names a new soldering iron employing a cast aluminum head in which the electric heating element is hermetically sealed to surround the shank of an interchangeable tip. The iron is available with a range of tip design, each held in place by turning an eccentric pin. Ratings are 70 to 800 watts for operation on 110 or 220-volt ac. The iron holds a steady heat, recovers rapidly, is proof against element burnout for the life of the tool. List price ranges from about $36 to $57, depending on the tip design. All are illustrated and described in a 4-page piece of literature. "Zeva Electric Soldering Tools."

If you write maker identify as IEN - 9896

TESTING . . Book of methods on performance testing of compressors, engines, pumps

John Wiley & Sons Inc.
440 Fourth Ave., New York 16, N. Y.

Reasons why that lie behind the methods presented are stressed in new 310-page book, "Measurement Techniques in Mechanical Engineering." List price is $5.50. The book describes instruments, equipment, applications in measuring area, mass, time, speed, electrical variables, pressure, force, temperature, fluid flow, heat content.

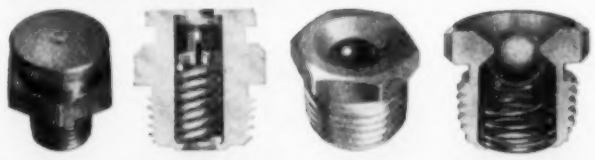
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9897

There's All the Difference in the World in Grease Fittings!

UNIVERSAL

Specify **UNIVERSAL'S**
New Giant Button Head or Flush Type Fittings



Streamlined One-Piece Design | Giant Button-Head Fitting, Plug Check | Streamlined One-piece Design | Giant Flush-Type Fitting, Ball Check

Note the practically indestructible one-piece construction, streamline design, positive seating of ball or plug check. Special spring design assures maximum clearance for free passage of grease. For a really modern, improved grease fitting, specify UNIVERSAL. Application engineering available promptly on request. Write now for complete information.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 ALLEGHENY AVE., OAKMONT, PA.

If you write maker identify as IEN - 9898

MYSTIK BRAND
• SELF-STIK

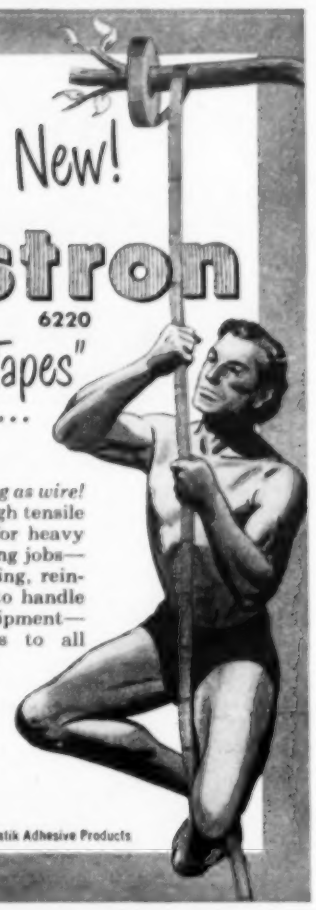
New!

Flexstron

Trademark 6220

"Tarzan of the Tapes"

cuts packaging costs . . . speeds operations!

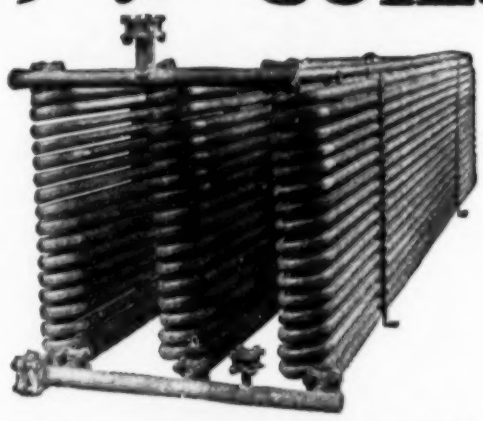


Flexible as ribbon . . . Strong as wire! A tough, rubber-fibrous, high tensile filament reinforced tape for heavy duty packaging and packing jobs—strapping, bundling, binding, reinforcing, palletizing. Safe to handle—needs no special equipment—grips instantly—conforms to all shapes—will not cut into cartons. Write for full information and free sample. Mystik Adhesive Products, 2644 North Kildare Ave., Chicago 39.

T. M. Mystik Registered © 1953 Mystik Adhesive Products

If you write maker identify as IEN - 9899

PITTSBURGH a air p pressure t tested COILS



Pipe Coils — Bends — Boiler Tubes — Skid Pipes

Electrically welded, continuous; Air-Pressure-Tested while submerged in water. Built to your specifications.

— Send for Coil Data Book, and let us quote —

Welded Headers • Welded Ammonia Receivers • Accumulators

Pittsburgh Pipe Coil & Bending Company
Division of Pittsburgh Standard Conduit Co.
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA

If you write maker identify as IEN - 9900

Colonial Develops SPECIAL RUBBERS

FOR *Tough* INDUSTRIAL APPLICATIONS

CONSULT OUR ENGINEERS ON YOUR RUBBER PARTS PROBLEMS AT NO OBLIGATION

The Colonial Rubber Company has the experience, the technical staff, and the facilities to meet your *special* requirements in industrial rubber parts. Our service is fast, efficient and precise for three important reasons:

Colonial Operates Its Own
- RUBBER RESEARCH LABORATORIES
- DIE-MAKING MACHINE SHOP
- PARTS PRODUCTION PLANT

Send for Free Illustrated Booklet

Contains complete details on Colonial's custom rubber compounding and molding . . . shows *why* manufacturers can use this service to advantage.

230 D

Colonial Rubber Co.
Ravenna, Ohio

If you write maker identify as IEN-9901

THEY'RE
RESOLITE
SHATTERPROOF LIGHTS!

Every factory or shop subject to severe vibration, concussion, intermittent radiant heat and other causes of glass pane breakage, should be glazed with shatterproof, crackproof RESOLITE.

Pale green Resolite provides high light transmission, excellent light diffusion and visual comfort. Resolite is molded of polyester resins, reinforced with Fiberglas mat. It is unaffected by weather extremes of heat, cold or moisture and inert to industrial fumes.

For glazing partitions or similar use, Resolite is supplied in flat sheets up to 42" x 96", in standard or extra heavy weights, and in eight colors. Sheets or lights are cut at the factory to specified dimensions, but may be cut on the job, when necessary, with a hand or disk saw. Standard glazing methods are used to install Resolite.

Resolite is also supplied in standard corrugated roofing sheets for simplified skylighting.

For complete information and name of nearest distributor, write:

Route 19

RESOLITE Corporation • ZELIENOPLE, PA.

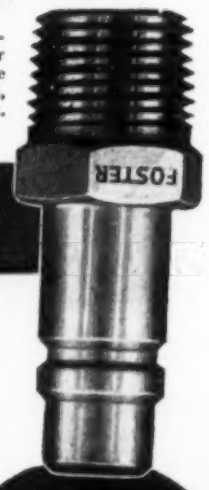
If you write maker identify as IEN-9902

FOSTER
Chrome Sleeve Quick Detachable
COUPLERS
AND HOSE FITTINGS

Price...Lower than most
Quality...None Better
Delivery...Immediate

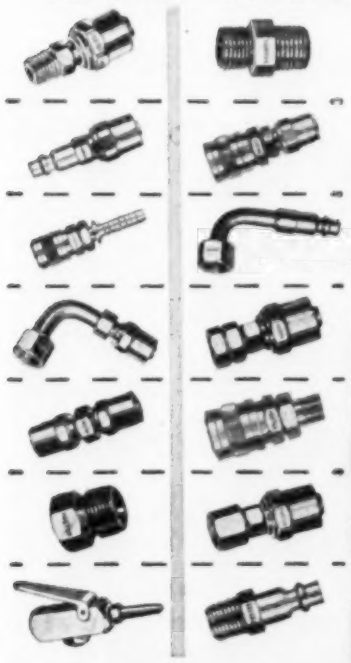
- Reusable Socket Heads for Lower Replacement Cost!
- One Second Hookup Under Pressure!
- Tight-Seal, Dirt-Proof Construction! Leak-proof!
- Instant Automatic Flow! Swivel Action!

Foster Quick Detachable Couplers for pneumatic and hydraulic applications give longer service and cost less than other comparable couplers. Delivery of any order, large or small, is immediate. An order to Foster is faster. Write Dept. 3.

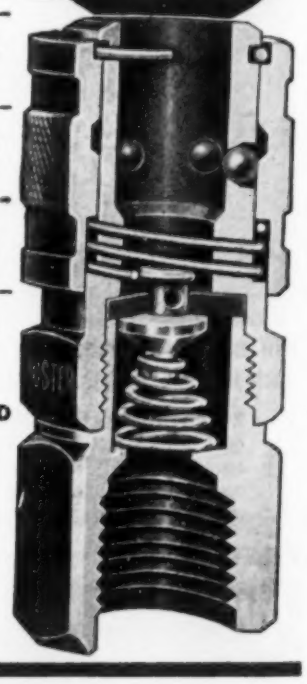


FOSTER MFG. COMPANY, INC.
2850 Gravois • St. Louis 18, Mo.

FOSTER FITTINGS ARE AVAILABLE THROUGHOUT THE NATION



Send for *Free* CATALOG



ASK US WHY WE RECOMMEND

If you write maker identify as IEN-9904

MAGNET . . Permanent base unit mounts dial indicator, is adjustable

Source: CULLEN MFG. CO.
1316-20 Clark St., Racine, Wis.

$8.50 less indicator

No. 350-A is new design of the Erick Magna-Holder permanent magnet base to take a dial indicator to 3 in. in diameter. The unit represents further development of the base previously described IEN-841-53. It mounts on finished flat or cylindrical ferrous surfaces. It exerts a holding pull of 50 pounds.

An aluminum head mounts between the indicator and the magnetic base to isolate the magnet. A thumbscrew at one end permits lateral adjustment of ½ in. in the indicator position. A second screw locks the setting. Base dimensions are 3½ by 1 by 1 inch.

If you write maker identify as IEN-9905

SOLDERING . . Liquid flux for stainless types of ferrous metals

Source: REMONT MFG. CO.
1310 Meyers Road, Lombard, Ill.

Free sample upon request

Stainless "48" is a new soldering flux for use on stainless steel and alloys containing nickel, chromium, manganese, molybdenum, tungsten, vanadium. The flux removes oxides without affecting corrosion resistant properties and assists the solder to flow. It promotes good capillary solder action and is displaced from solid metal by the molten solder. Any flux residue can be removed by washing in water.

The flux is suited for use in connection with irons, flame and dip soldering. It is a companion material to the Tins-tyter flux for non-stainless metals, described IEN-7095-53.

If you write maker identify as IEN-9906

HANDLING . . Self-dumping hopper for a jack-lift or a fork lift truck

Source: ROURA IRON WORKS
1399-03 Woodland Ave., Detroit 11, Mich.

Adaptable

New base, for the Roura self-dumping hopper, permits use of a jack-lift or a fork lift truck to move the hopper from one location to another. Two wheels at the dump end take a portion of the load when a jack-lift is applied at the opposite end. A fork truck picks up both the wheels and the base to clear the floor.

Hopper capacity ranges from ½ to 2 cubic yards. Construction is in welded steel. A latch at the rear holds the hopper in carrying position. It rolls forward to dump when the latch is released. It recovers and latches empty.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9907

PUMPS. 5.5-75 g.p.m.
MOTORS. 5.8-15.5 h.p.

COMMERCIAL HYDRAULIC OIL
Fluid Power Controls
are REDUCING COSTS and INCREASING PRODUCTIVITY for the truck farming industry.

FOR COMPLETE DETAILS ASK FOR YOUR COPY OF CATALOG H-7

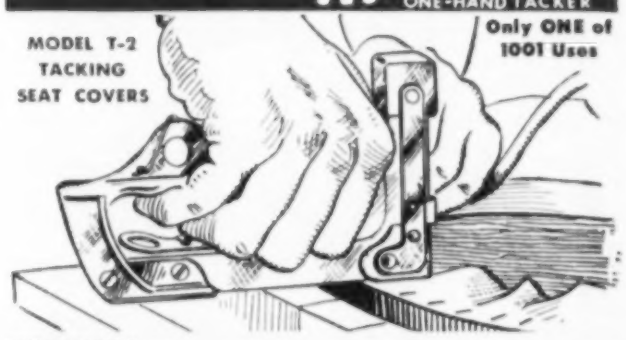
THE "COMMERCIAL" SHEARING AND STAMPING COMPANY
YOUNGSTOWN, OHIO
CHICAGO, ILL.
SALT LAKE CITY, UTAH

If you write maker identify as IEN-9908

YOU CAN DO IT AT LESS COST with HANSEN ONE-HAND TACKER

MODEL T-2 TACKING SEAT COVERS

Only ONE of 1001 Uses



FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST! (MODEL T-3-4 HANSEN TACKER)

Hansen saves *time, steps,* and *materials* — operates faster — saves back-tracking — ready for instant, continual use.

36 DIFFERENT MODELS
80 STAPLE SIZES

Request Booklet . . . today

A.L. HANSEN MFG. CO.
5051 RAVENSWOOD AVE. CHICAGO 40, ILL.

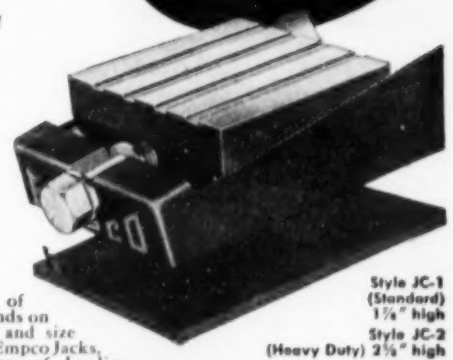
If you write maker identify as IEN-9909

QUICK, ACCURATE MACHINE LEVELING

WITH VIBRATION ABSORBING MOUNTING PADS

- *Provides Accurate Adjustment*
- *Reduces Vibration and Noise*
- *Lower and Sturdier*
- *Self-Aligning*
- *Two-Way Control*
- *Smooth Slipways*

Empco JACK



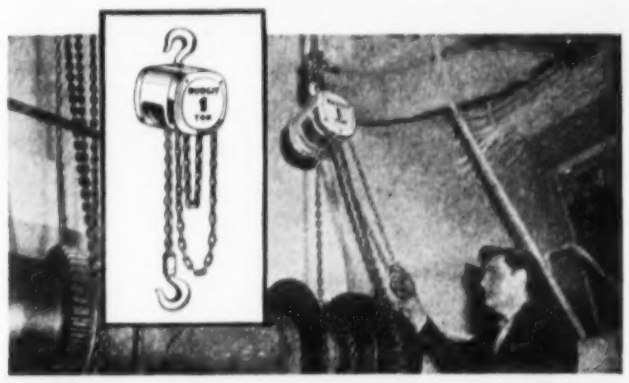
Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Style JC-1 (Standard) 1⅞" high
Style JC-2 (Heavy Duty) 2⅝" high

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN-9910



SMOOTH PERFORMER SAVES EVERYWHERE

The 'Budgit' Aluminum Chain Block is a dependable chain block, always ready and able to do a full day's work on spot-lifting jobs anywhere and everywhere. In maintenance, on loading and unloading docks, on construction jobs, and in those emergencies that crop up, the 'Budgit' Chain Block will handle your loads in a hurry.

One man, by himself, can lift, carry, hang up, and use the 'Budgit' Chain Block. It's light — the ¼-ton size weighs 29 lbs. A pull of only 25-lbs on the hand chain lifts the full load with fast time and effort saving efficiency. The automatic, powerful load brake makes lowering easy and safe. Capacities: ¼, ½, 1, and 2 tons. Write for Bulletin No. 398 for complete details.

'Budgit'® CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, and 'American' Industrial Instruments.

If you write maker identify as **IEN - 9911**

If you write maker identify as **IEN - 9912**

If you write maker identify as **IEN - 9913**

WORK BENCH and TOOL STORAGE COMBINED

You will like this all-steel heavy-duty combination cabinet and work bench. Twelve-gauge steel top, suitable for mounting small machinery. Back and end stops are removable. Adjustable shelf*, swinging doors with three point locking device. Overall 36" x 24" x 34" high. Shipped set up.

* Extra shelves available

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

SEND *FREE* Literature . . . we're interested in: .....Benches .....Machine Tender Trucks .....Stools.

Company.....

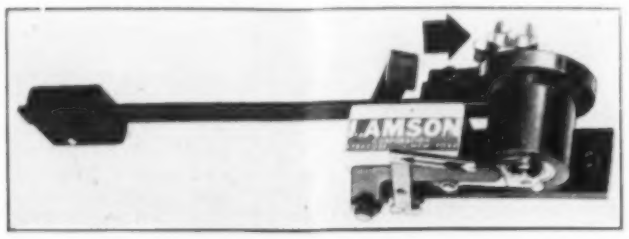
My Name.....Title.....

Address.....

If you write maker identify as **IEN - 9914**

DRIVE . . Overload protector for chain, actuates a limit switch

Source: LAMSON CORPORATION
303-5 Lamson St., Dept. C16, Syracuse 1, N. Y.



Company will recommend layout

Idler sprocket, to ride the load side of a drive chain, is mounted in a counterweighted eccentric bearing in this new protecting device. The bearing is assembled with a limit switch and link connection on a base plate. Installation is made so the counterweight arm is normally horizontal, with the sprocket riding on the chain to be protected, so it deflects the chain a little from a straight line.

Overload on the chain tends to straighten it against the counterweight action. This actuates the switch circuit which rates 10 amp. on 110-volt ac. The sprocket shaft is ⅞ in. in diameter. The device can be applied on chain drives with tension to 1,000 pounds. Sprocket pitch can be specified at ½ to 1¼ inches. Overall dimensions, without the weight arm, are about 9 by 7 by 5 inches. The arm extends 13 inches.

If you write maker identify as **IEN - 9915**

PROTECTING . . Nylon goggle for use in chipping, grinding, welding

Source: WILLSON PRODUCTS INC.
217 Washington St., Reading, Pa.

Light and tough

Kover-Mor is a new goggle to employ over prescription glasses in general protection duty. Standard 50-mm. round lenses are held by external retaining rings in the nylon eye cups. A rigid metal top bar holds the cups in position and permits width adjustment. A two-piece adjustable head band and leather nose and bridge curtain complete the assembly. Slots in the lens retaining rings and screens in the eyecups provide two-way ventilation. Heat conductivity of the nylon is low. It also is non-flammable.

If you write maker identify as **IEN - 9916**

MANAGEMENT . . Book on chemical industry presents facts on its growth, operation and scope

Manufacturing Chemists' Association Inc.
H & 15th Sts., N. W., Washington 5, D. C.

First Edition of "The Chemical Industry" is 116-page paper-bound book of figures and information summaries that lists at $1 for a single copy. The book tells about the industry and its growth, what it makes, how it operates, research, and the part it plays in everyday life.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9917**

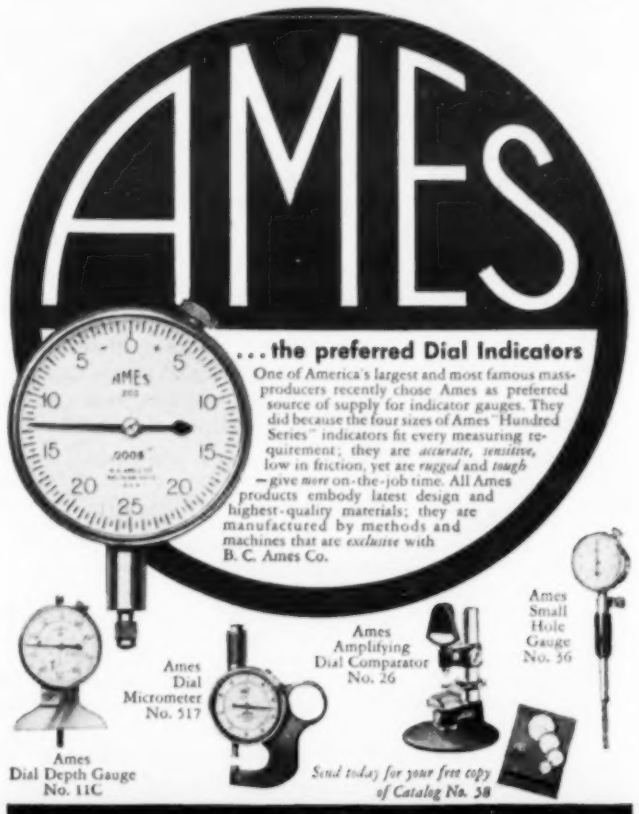
"John Crane" *Plastic Lead Seal is the most economical all-purpose sealing compound for pipe joints, studs and gaskets—*because you use less to get a better seal.* PLS seals for the life of the connection, yet never hardens, allowing joints to be easily broken after years of service.

PLS prevents galling . . . is insoluble in water, gas, steam, many chemicals and all petroleum products. Use it for all services . . . low or high pressure applications up to 6000 psi. . . . temperatures to 500°F. Carries the Underwriters' seal of approval.

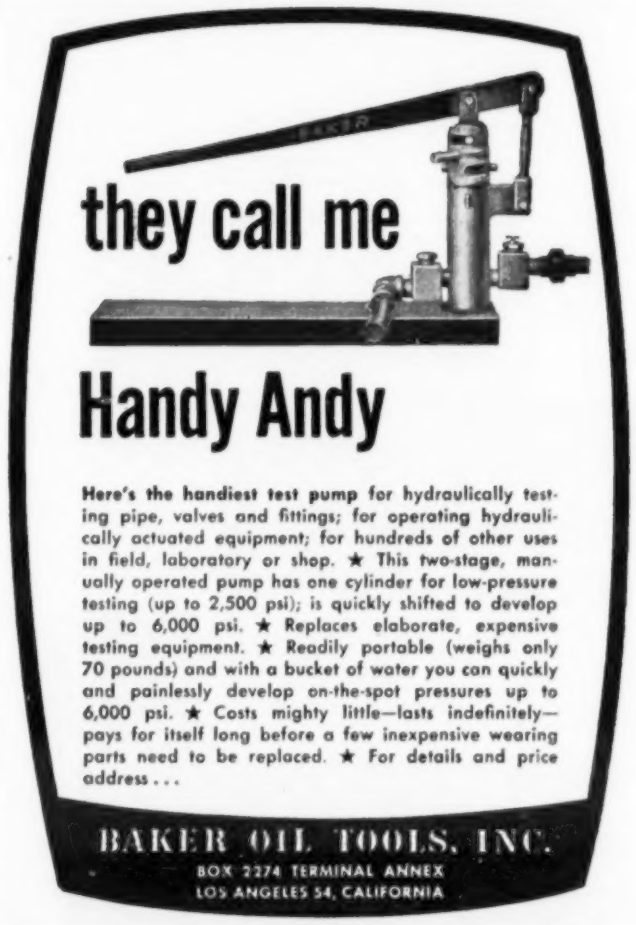
Prove to yourself that it takes less PLS to give a perfect seal. Send for a generous free sample. Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Illinois.

CRANE PACKING COMPANY

If you write maker identify as **IEN - 9918**



If you write maker identify as **IEN - 9919**



If you write maker identify as **IEN - 9920**

NOW make metal, concrete, and wood floors, staircases, areas around machinery and loading platforms SLIP-PROOF — WET OR DRY.

R-MIR-DEK NON-SLIP COATING is the only lightweight safety floor coating that is Fire retardant, Anti-corrosive, Easily applied, and Oil, Grease, Alkali, and Acid-resistant. Compounded of durable phenolic resins and polymerized oils with everlasting aluminum oxide granules added.

FREE 2-color R-Mir-Dek brochure. Write to Department IEN-9

MIRACLE ADHESIVES CORP.
214 E. 53rd STREET, NEW YORK 22, N. Y

If you write maker identify as **IEN - 9921**

100 MARKS IN A MINUTE OF MARKING TIME

Marking production will rise with the use of Matthews "AIRGRIT" Marking Machine . . . it takes about a half-second to complete the normal marking cycle with this amazing unit. "AIRGRIT" produces a permanent mark on plastic, glass, cutlery, machined parts . . . parts with delicate or precision finishes which conventional marking methods would mar or distort. "AIRGRIT" . . . the compact, safe, easy-to-operate, revolutionary marking unit for producing permanent, distortion-free, economical marks.

Write Matthews today for literature and information, and a sample of "AIRGRIT" marking.

JAS. H. MATTHEWS & CO.
3962 FORBES ST. • PITTSBURGH 13, PA.
CLIFTON, N. J. BOSTON PHILADELPHIA CHICAGO

If you write maker identify as **IEN - 9922**

A.C. or D.C. . . . single phase or polyphase . . . induction or synchronous . . . in all ratings and frame types —whatever the need, you can find the one motor best suited to the job in the complete line of Fairbanks-Morse Motors. Call your nearby Fairbanks-Morse electric motor branch for details, or write: Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Ill.

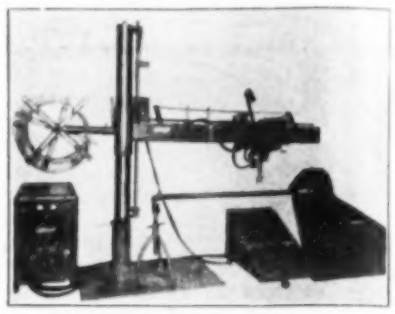
FAIRBANKS-MORSE,
a name worth remembering

ELECTRIC MOTORS AND GENERATORS • MAGNETOS • PUMPS
DIESEL LOCOMOTIVES AND DIESEL ENGINES • FARM MACHINERY
SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT

If you write maker identify as **IEN - 9924**

WELDING . . Automatic arc machine, radial arm design, rectifier powered

Source: LEADER WELDING & MFG. CO.
2416-20 Sixth St., Berkeley 2, Calif.



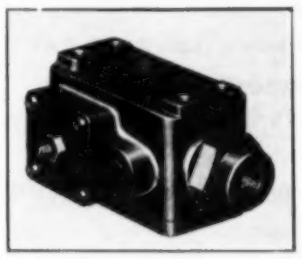
For production

Connection is to a 220/440-volt 3-phase, 150/75-amp. input line to operate this new Model-650 dc. arc welding machine. The automatic welding head draws wire from a reel, feeds it to weld on longitudinal or circumferential seams on work positioned in stationary or rotating assembly in supports provided for this purpose. The radial arm measures 8 ft. in length. The vertical column permits 6 ft. of adjustment, all under pushbutton control.

If you write maker identify as **IEN - 9925**

VALVE . . Pressure regulator, 2,000 lb. inlet, 50 to 300 lb. outlet

Source: ARO EQUIPMENT CORP.
107-11 Madison St., Bryan, Ohio



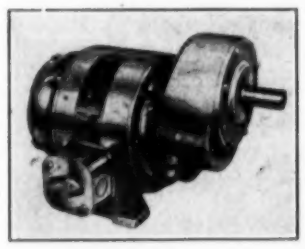
Small and light

Flow rating is 300 liters per min. for this new Model-10700 pressure regulator. It applies in lines carrying air or oxygen. It can handle more than its maximum rated capacity if pressure drop, from zero to full flow, can be more than 15 per cent through the valve. Weight is 8 ounces. Overall dimensions are 1⅝ by about 2 by 2⅝ inches.

If you write maker identify as **IEN - 9926**

DRIVE . . Speed reducer mounts adjustably on motor frame

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Alhambra, Calif.



To your order

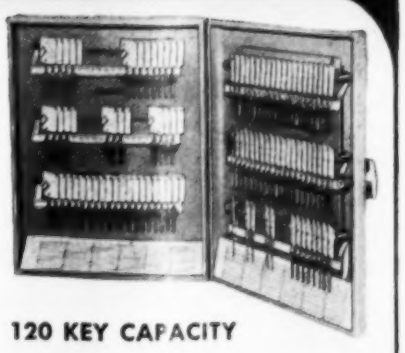
Rating is from ½ to 5 hp. and output speed can be specified between 190 and 520 rpm. for this new offset shaft Motoreducer. The unit employs helical gears in single reduction assembly to operate in a bath of lubricant in the sealed housing. The housing applies on the motor frame and can be rotated on the frame to place the output shaft in various positions in relation to the motor center to meet requirements.

The motor is available in squirrel cage or slip ring design, in single or multi-speed assembly, plain or with the company's "fluid shaft" and one or two magnetic brakes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9927**

STOP HUNTING FOR KEYS



120 KEY CAPACITY

Here's real "key insurance" in a compact KE-CABINET. Made of 20 gauge cold rolled steel with suitable hardware to provide maximum key security. Equipped with numbered KE-TAGS of durable, vulcanized fibre. KE-CABINETS come in two sizes to hold 60 to 120 keys and 100 to 200 keys. The cabinet is finished in modern office grey.

For further information write
CUSHMAN & DENISON MFG. CO.
153 West 23rd Street • New York 11, N. Y.

KE-CABINET

If you write maker identify as **IEN - 9928**

LOW COST COMPRESSED AIR ON THE SPOT

MOVE THE AIR SUPPLY RIGHT TO THE SPOT WHERE IT IS REQUIRED WITH A *Quincy TX-8*

Hundreds of jobs require "on-the-spot" compressed air. Quincy's Portable TX-8 Compressor is the answer to your problems. Quincy Portable Compressors are available in a wide range of sizes from 1 to 45 c.f.m. Special mountings and rugged construction enables Quincy Portable Compressors to meet extra service requirements and longer trouble-free service life.

Free folder tells you all about portable compressors. Write: Dept. H-32 Quincy Compressor Co., Quincy, Illinois.

QUINCY COMPRESSOR CO.
QUINCY, ILLINOIS
Branch Offices:
New York • Philadelphia • Chicago
Minneapolis • St. Louis • Dallas
San Francisco

If you write maker identify as **IEN - 9929**

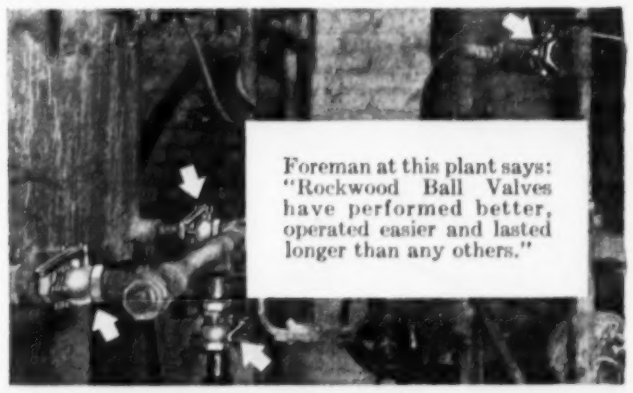
FOR INCREASED PRODUCTION, LOWER MAINTENANCE COSTS

Thor **AIR AND ELECTRIC IMPACT WRENCHES**

Unsurpassed for *power*, Thor Impact Wrenches are *ruggedly built* to stand up under hardest daily production usage. *Extra strength* at vulnerable points of wear. Air, universal electric and 180 cycle electric models available for every application. For catalogs, write Thor Power Tool Company, Aurora, Ill.

TOOL MAKERS FOR SIXTY YEARS

If you write maker identify as **IEN - 9930**



Do you need a FULL-FLOW VALVE?

FULL-ROUND-FLOW in ceramics plants, where Rockwood Ball Valves, handling clay-and-water mixtures, protect product quality by preventing air bubbles caused by turbulence in conventional valves. What are *your* applications?

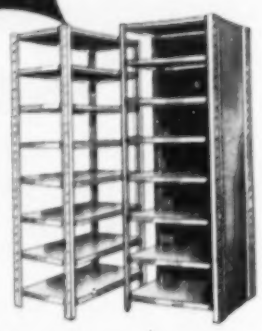
Other features — positive leakproof seating; quick opening and closing and extra wear-resistance. Tested and listed by Underwriters' Laboratories, Inc. Write for complete details. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 9931

IMMEDIATE DELIVERY

Equipto Iron-Grip Steel Shelving



Exclusive stud eliminates nuts, bolts, or tools . . . speeds shelf assembly

- Each shelving unit is complete in itself . . . fits with all other units.
- New units may be added later . . . rearrangements made anytime.
- All shelves are instantly adjustable with studs on 1½" centers. There are no nuts, no bolts, no ungainly clips.
- Unlimited arrangement of units, shelves, and dividers, custom tailor these Equipto stock units to your exact storage needs.
- Units are available in all sizes, either open or closed, with or without dividers, bin fronts, and drawers.

Write Today for Free Catalog of Complete Line

Equipto — Division of Aurora Equipment Co. 655 Prairie Ave., Aurora, Illinois

MANUFACTURERS OF STEEL SHELVING . . . PARTS BINS . . . DRAWER UNITS

If you write maker identify as IEN - 9932

Brand Spanking New!

MEYCO CONTROLLED CUT CARBIDE TIPPED SAFETY SAW

★ The latest addition to the famous MEYCO line of precision cutting tools. This new controlled cut, carbide tipped safety saw has many advantages: It's SAFE: will not pull hand into the blade, will not grab and kick-back work. It's ECONOMICAL: costs less to buy, longer life between grinds; cuts smoother, longer. Its CONTROLLED CUT regulates rate of feed, assures clean cut; makes chips instead of saw dust. Available at leading mill supply and hardware houses, or direct from factory. Write for fully descriptive literature and price list. Ask for Catalog No. 18.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

If you write maker identify as IEN - 9933

ZIP OFF

with

AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, *thoroughly* removes scale, paint, rust and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 9934

TESTING . . Electric meters to read current, power, voltage

Source: GENERAL ELECTRIC CO. Dept. 6X-201, Schenectady 5, N. Y.

Multiple ratings

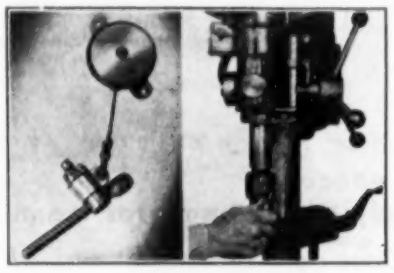
Molded Textolite is employed in the housing of this new line of electric meters. Unbreakable windows are molded into place over the dial faces. Each unit is equipped with a carrying strap and measures about 8 by 3 by 8 inches. Weight is 5 pounds. Type DP-11, illustrated, is for general maintenance testing and is accurate to 0.5 per cent of full scale. A companion unit, Type DP-12, is for precision use in production, field or laboratory. It is accurate to 0.25 per cent of full scale.

The mechanism employs a moving coil and iron core mounted in a die cast frame fitting between two Alnico magnets that are die cast inside of a soft steel ring. The rotating element is mounted on jewel bearings that, in turn, are spring mounted to absorb shock and operate satisfactorily when handled roughly. The mechanism is shielded to minimize interference when two or more of the instruments are used side by side or when stray magnetic fields are encountered.

If you write maker identify as IEN - 9935

RETRIEVING . . Spring operated reel and chain prevents loss of chuck key

Source: LUMMIS MFG. CO. 2240-44 E. Foothill Blvd., Dept. IEN, Pasadena 8, Calif.



$2.00 each

Key-Bak is a new metal housed retriever. It is equipped with a clock spring mechanism, 24-in. length of chain and a connection fitting to grip a standard chuck key. The housing is chromium plated and is fitted with ears to secure it by screws at any convenient position on a machine where the chucks are employed. Model 7, illustrated, is particularly for upright drilling machines.

If you write maker identify as IEN - 9936

PIPE . . Pocket book of 282 pages deals with pipe layout, bending, fittings, joints

Industrial Press
148 Lafayette St., New York 13, N. Y.

Author of new "Pipefitters Handbook," Forrest R. Lindsey, is a pipefitter of 35 years' experience. His book is intended to assist in solving problems in pipe bending, offsetting, mitering, and making up joints with threaded, welding, flanged, solder fittings and valves. It gives dimension and mathematical data. List price is $6.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9937

NOW... for the first time **AT LOW COST...**

MORE PROFITS! with

CHAINVEYOR

LIGHT CAPACITY OVERHEAD CONVEYOR

Fully Enclosed, Continuous Powered

FEATURES—

SIMPLICITY—Engineered to eliminate complicated, fast wearing parts, Chainveyor is revolutionary in simplicity of design. **TRACK**—1⅝"x⅛" slotted steel tube easily installed with minimum support. • **CHAIN**—Full ball bearing wheels mounted on steel side links, heat-treated for long life. • **CURVES**—15" radii provides extreme flexibility. • **TAKE-UP**—Adjustable spring take-up automatically maintains uniform chain tension. • **VARI SPEED DRIVE**—Positive sprocket tooth drive with easily replaceable shear pin protection. • **CAPACITY**—30# per pendant at 6" intervals, 60# at 12" intervals when supported by 2 pendants with cross bar attachment.—up to 400# chain pull.

DISTRIBUTORS IN ALL PRINCIPAL CITIES

If your conveyor requirement falls within its capacity—INVESTIGATE CHAINVEYOR. Write today for full information. Dept. G

United States Spring & Bumper Co.
4951 Alcoa, Box 2475 Terminal Annex
Los Angeles 58, California

If you write maker identify as IEN - 9938

VOLTS and AMPS at a glance with the COLUMBIA

Complete with Voltage Leads and Carrying Case

A. C. TONG TYPE VOLT-AMMETER

• Quickly • Accurately • Safely

Columbia Type AC-1 provides ampere readings with a snap by merely clamping jaws around the electrical conductor, without breaking circuit or insulation. Voltage readings are taken quickly and easily with safety plug-in leads. This instrument is one of the Columbia line of tong type instruments of the highest quality and dependability.

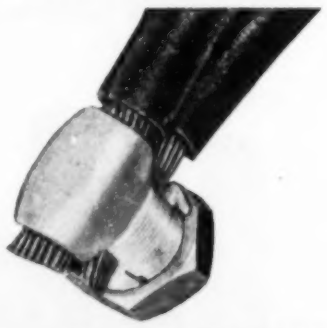
TYPE AC-1 FEATURES

- Measures up to 600 Amperes and 600 Volts.
- Amperes: 0/12/60/120/-600 A.C.
- Volts: 0/150/600 A.C.
- Convenient Range Switch.
- Insulated Jaws will accommodate Conductors up to 1½" diameter, Bus Bars up to 2" x ½".
- Accuracy: 3% full scale.
- Light Weight—Fits Easily into Pocket.
- High Quality at Low Cost.

Inquiries Invited from Distributors • Write for Descriptive Bulletin AC-19

COLUMBIA ELECTRIC MFG. CO. 4519 Hamilton Ave. Cleveland 14, Ohio

If you write maker identify as IEN - 9939



INSULATE SPLIT-BOLTS THIS EASY WAY!

1 Cushion sharp edges with "Scotchfil" Electrical Insulating Putty. Comes in 1½ in. x 5 ft. rolls, applies like tape. Moulds into a solid.

2 Insulate and seal against oil and moisture with "Scotch" Electrical Tape No. 33. Over 10,000 V. dielectric strength. U L seal.

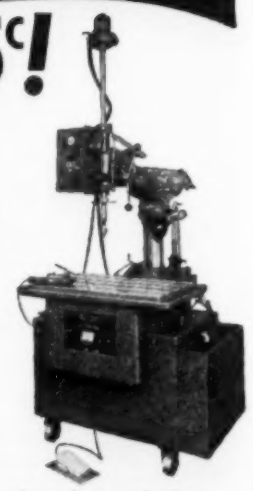
DO IT WITH "SCOTCH" BRAND... GET IT TODAY!

The term "Scotch" and the plaid design are registered trademarks for the more than 300 pressure-sensitive tapes made in U.S.A. by Minnesota Mining & Mfg. Co., St. Paul 6, Minnesota.

If you write maker identify as IEN - 9940

You can salvage Valuable Parts— —FOR LESS THAN 25¢!

Including Labor, Materials, Burden



Elox Electron Drills* are *production* machines designed for fast removal of broken taps, drills, studs, etc., without harm to thread or wall, sticking or welding. Most units are completely self-contained, easily transported and come ready to plug in. As simple to operate as any drill press, Elox Electron Drills* are an insurance against loss of time, money and materials. Throughout the world, Elox machines salvage millions of dollars of work each year. Check your scrap today. There's an Elox Electron Drill* priced for any industrial requirement. Write today.

ELOX CORPORATION OF MICHIGAN
CLAWSON, MICH.
724 N. Rochester Road

If you write maker identify as IEN - 9941

Fielden telstor

ELECTRONIC CONTINUOUS LEVEL INDICATOR

- *Accurate to ± 2%*
- *No Moving Parts, Only One Radio Tube*
- *Records Readings at Distances of Over a Mile*
- *Low First Cost—Low Operating Cost*

The Fielden TELSTOR Electronic Level Indicator measures the levels of powders or granular solids, liquids, viscous fluids, or interface . . . almost any type of conducting and non-conducting material that flows . . . accurately and continuously. Operates on a change of capacity. No pneumatic or hydraulic piping to clog or corrode, no floats to stick or leak. Gives dependable measurement over full length of electrode. Operates on materials subjected to pressure or vacuum. Available with dust-tight, weatherproof, cast aluminum housing. Easily installed and serviced. Electrodes available to suit a variety of applications. Write for detailed information to Dept. E.

Fielden
INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
2920 N. 4th St., Philadelphia 33, Pa.
Dollar for Dollar—Your Best Instrument Value

If you write maker identify as IEN - 9942

Added Evidence that—

Everyone Can Count on VEEDER-ROOT

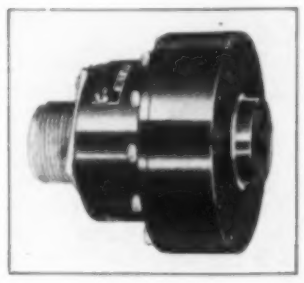
REPORTER AT LARGE . . . that's what you might call this new Veeder-Root Reset Magnetic Counter . . . adaptable to remote counting from machines or processes to central boards or instrument-clusters, wherever you want to put them. NOW . . . what can your imagination do with these few facts? For the *full facts*, write:

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONN.

If you write maker identify as IEN - 9944

SWITCH . . Pressure operated contacts rate 5 amp. on 110 volt ac.

Source: G. M. GIANNINI CO.
115-19 E. Colorado St., Pasadena 1, Calif.



Model 44517

Operation at any differential pressure, between 10 and 200 lb., can be specified for this new switch. The operating mechanism is enclosed in a housing that measures 2½ in. in diameter. Application is in pressure circuits for control, signaling or shut-off duty.

The switch will operate satisfactorily in a temperature range between minus 54 and plus 71 deg. C. and at altitude to 50,000 feet. Double amplitude vibration, to 0.032 in. at 10 to 55 cps., will not affect contact opening and closing.

If you write maker identify as IEN - 9945

WATERPROOFING . . Repellent treats absorbent and solid materials

Source: DOW CORNING CORP.
P. O. Box 592-A, Midland, Mich.

Makes water run off

New solution of sodium salts of certain materials, known as Dow Corning XS-1, is now available as a water repellent suitable for a variety of organic and inorganic materials. It can be applied on paper, wood, glass, asbestos, brick, concrete. It is particularly suited for use on paper plates and cups, glass or ceramic insulator bodies, asbestos cloth or paper, masonry, brick, concrete or mortar. It can be used as a soil stabilizer for engineering applications and is effective as a water repellent treatment for dirt roads and ditches.

The material is supplied as a 25 per cent solids concentrate. It is diluted with water for concentrations ranging from 0.5 to 5 per cent depending on the material being treated and the desired effect. The diluted solutions can be sprayed, brushed, mixed with the material, or the product can be immersed. Two coats, several hours apart, are recommended for best results. Maximum water repellency is developed within 24 hr. of air drying after the second coat.

If you write maker identify as IEN - 9946

PROTECTING . . Hand cream in collapsible tube for plant workers

Source: BOYER-CAMPBELL CO.
6538-42 St. Antoine St., Detroit 2, Mich.

Washes off at day's end

New packaging, in 8-oz. collapsible tubes, is announced by the company for its Nos. 1 and 3 Skin-Cote hand cream. The package conserves use of the cream, promotes cleanliness and retains its identification permanently.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9947

Specify GM PRECISION-ENGINEERED

SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

In the operation of—

- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of GM LABORATORIES • Inc.
4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 9948

COMBAT WEAR

in your plant
in your product

Use Stock Bars of

AMPCO* METAL

Grade 18
Centrifugally Cast

Don't put up with costly wear. Make your bearings, bushings, gears, nuts, etc. out of stock bars of centrifugally cast Grade 18 Ampco Metal — from your own stores or Ampco's Milwaukee stock.

You can get 3 heat-treated variations from Ampco, Milwaukee. Select the one best suited for any particular application by reference to the following table:

	Grade 18	18-13 (H.T.)	18-22 (H.T.)	18-23 (H.T.)
Tensile	105,000	105,000	110,000	110,000
Yield	38,000	35,000	55,000	46,000
Elongation	15.0	20.0	8.0	6.0
Brinell (3000 kg)	183	174	229	187

Stocked in standard 12½" lengths, rough bored, faced one end. Prompt delivery on all sizes from 1⅛" to 3⅞" I.D., 1¼" to 6" O.D. Solid extruded bars, ½" to 4½" also available. Write today for your free wall chart and a 4-page data sheet giving detailed information.

Ampco Metal, Inc., Dept. IE-9, Milwaukee 46, Wis.
West Coast Plant • Burbank, California
D-16 *Reg. U. S. Pat. Off.

If you write maker identify as IEN - 9949

Lightweight HELIARC TORCH

is water-cooled...

FOR EFFICIENT INERT GAS WELDING AT LOW COST

You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 9950

AMSCO V-MANG

The new moly-manganese electrode that's better than nickel-manganese rods for build-up and repair

- **Tougher deposit**
- **Higher yield strength**
- **Better weldability**
- **Less cracking**

For full engineering and metallurgical information on Amsco V-Mang, write for technical data sheet to Amsco, Chicago Heights, Illinois.

AMERICAN Brake Shoe COMPANY — AMERICAN MANGANESE STEEL DIVISION
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

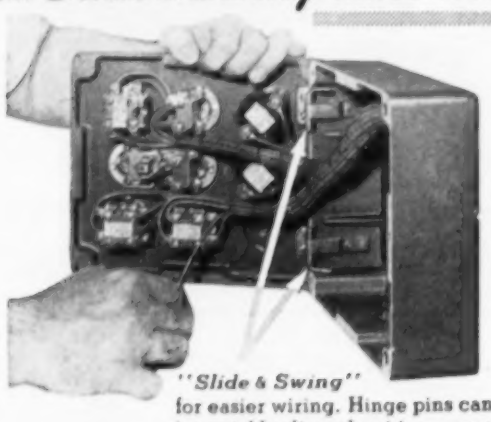
Other Plants: New Castle, Del., Denver, Cleveland, Cal., Los Angeles, St. Louis. In Canada: Joliette Steel Division, Joliette, Que. Amsco Welding Products distributed in Canada by Canadian Liquid Air Co., Ltd.

If you write maker identify as IEN - 9951

FOR Easier Wiring

Square D OIL-TIGHT PUSHBUTTON STATIONS

with "Slide & Swing" HINGE COVERS



"Slide & Swing" for easier wiring. Hinge pins can be quickly slipped out to remove cover when installing units.

Write for Bulletin 9001 Type T. Address Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

DETROIT · MILWAUKEE · LOS ANGELES

If you write maker identify as IEN - 9952

When so much depends on so little

Don't settle for less than "Chicago" High Carbon Heat Treated Cap Screws

- For complete hardness from the center all the way out—no soft skin to cause wear or breakage due to fatigue.
- For freedom from scale — cleaner to handle — give a tighter thread fit — have smoother bodies.
- For extra safety — better appearance — ALL at no increase in cost to you.

You get these advantages with "Chicago" Heat-Treated Cap Screws

Corners stay sharp . . . provide positive non-slip wrench grip . . . No decarburized surface.

Bodies wear longer . . . nominal diameter remains to size . . . No decarburized surface.

Threads without nicks . . . hold tighter in engagement . . . No decarburized surface.

Your Service-Conscious Industrial Supply Distributor carries a complete stock of our products. Ask him for samples of "Chicago" Heat Treated Cap Screws. His familiarity with your local field conditions enables him to fill your supply needs promptly and correctly. Ask for "Chicago" and get better service.

THE CHICAGO SCREW COMPANY

2525 WASHINGTON BOULEVARD BELLWOOD, ILLINOIS

If you write maker identify as IEN - 9953

322,000 sq. ft. under One Roof . . . and heated comfortably with Reznor!

North American Aviation—California Plant

REZNOR Gas Unit Heaters . . .

were used because the specifications called for:

1. Rock-bottom heating cost per square foot.
2. High-speed installation.
3. Thorough flexibility of area-heating control.
4. Maximum personnel comfort.

SEE SWEET'S CATALOG FILES

REZNOR WORLD'S LARGEST-SELLING GAS UNIT HEATERS

REZNOR MANUFACTURING COMPANY
10 UNION STREET · MERCER, PENNSYLVANIA

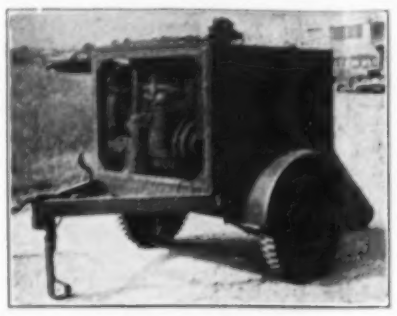
Please send me Reznor Catalog No. GN-52

Name ..... Firm ..... Address ..... City ..... Zone ..... State .....

If you write maker identify as IEN - 9954

REFRIGERATING . . Mobile equipment to cool small enclosures and vehicles

Source: REFRIGERATION ENGINEERING CORP. 150 Nassau St., Room 604, New York 38, N. Y.



Originally for Army

Gasoline engine, liquid cooled design, drives a compresser handling Freon-12 refrigerant in this new mobile equipment. The refrigerant is fed to a cooling coil over which air is blown to serve an enclosed space such as a small field building or a utility van containing electronic equipment. Heat rating is 26,500 btu. per hour for the new assembly.

Feature in the design is a heating coil with thermostatic valve control. It was designed by Tenney Engineering, Inc., to maintain air temperature in the enclosed space within 2 deg. F. This heating coil is connected to the liquid coolant in the engine radiator. It employs the heat in this coolant to operate the reheat coil so the refrigerated air can be circulated over it before being delivered to the conditioned space. The arrangement permits operating the gasoline engine and refrigerant compressor at a constant speed.

If you write maker identify as IEN - 9955

HANDLING . . Canvas hamper insert with spring suspended false bottom

Source: W. T. LANE & BROS. INC. 652 Prospect St., Poughkeepsie, N. Y.

Automatic Lift

New bottom plate fitted with protected springs and suspension hooks is available from the company for application in canvas trucks, baskets and hampers. A typical unit is shown in the illustration. When work is loaded the bottom descends. It rises, as the work is removed, so the operator does not have to bend over and reach in. The canvas covered bottom is built upon a steel frame. The corrosion resistant springs are enclosed in canvas sleeves. The unit is available in a range of sizes for specified shape and size of the container in which it applies.

If you write maker identify as IEN - 9956

WELDING . . Circular cardboard calculator gives welding preheat and interpass temperatures for steel

Lincoln Electric Co.
Box 3035-A, Cleveland 17, Ohio

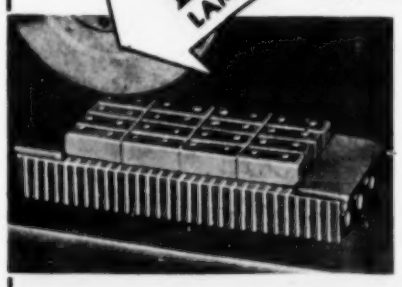
Redesign is announced for the company's Welding Preheat and Interpass Temperature Calculator, a 6¼-in. circular unit that lists at 50 cents with an instruction booklet. It takes analysis and thickness of metal into account to find amount of preheat to minimize tendency to harden or crack.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9957

SPEED SURFACE GRINDING SET-UPS WITH MAGNE-BLOX LAMINATED PARALLELS and V BLOCKS

Ideal for small pieces and any odd shapes that cannot be put directly on the surface plate.



- SAVE YOUR MAGNETIC CHUCKS
- ELIMINATE CLAMPS
- ELIMINATE HOLDING DEVICES

GRIND WORK SQUARE

GRIND WORK PARALLEL

HOLD ROUND PIECES

WRITE FOR ILLUSTRATED FOLDER

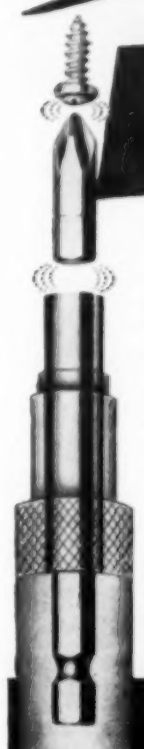
GEORGE SCHERR CO., Inc.

COMPLETE LINE OF PRECISION INSTRUMENTS

200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 9958

NEW MAGNA BIT HOLDER*



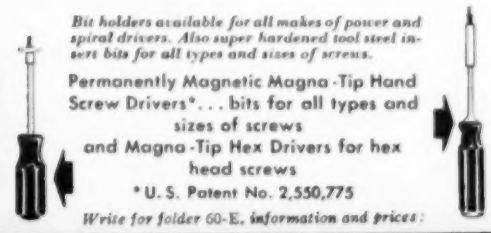
A REVOLUTIONARY, LABOR SAVING TOOL. CUTS SCREW DRIVING COSTS 3 NEW WAYS

Hand starting or *pre-positioning screws* in assembly operations is *no longer necessary*; a high energy *permanent* magnet in bit chuck holds the bit and energizes it with 10 times the "pull" to hold the screw *firmly* on bit. Labor costs are cut.

Reduces bit costs through the use of super hard, low-cost interchangeable insert bits.

Reduces bit wear and replacement since the energized bit seats itself positively in the screw slot or recess.

Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.



Permanently Magnetic Magna-Tip Hand Screw Drivers*. . . bits for all types and sizes of screws and Magna-Tip Hex Drivers for hex head screws

*U. S. Patent No. 2,550,775

Write for folder 60-E, information and prices:

MAGNA DRIVER CORP.

779 Washington St. Buffalo 3, N. Y.

If you write maker identify as IEN - 9959

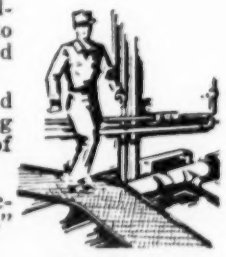
SOLVE ALL YOUR SKIDDING & SLIPPING PROBLEMS

with Bustin FIRM-GRIP SAFETY GRATING

Bustin FIRM-GRIP* grating guarantees safe, comfortable walking under the most adverse conditions where grease, oil or water can cause accidents from slipping.

FIRM-GRIP is acclaimed by Safety Engineers of major industrial concerns for its exceptional traction quality and other safety features due to the unique assembly and engineered spacing of the contact points.

Made in various designs and sizes and adaptable for installation on skidding problem spots where other makes of gratings cannot be considered.



"Bustin — Designers and Manufacturers of Metal Products Since 1928"

Bustin FIRM-GRIP GRATING CORP.

110 E. 130 Street, New York 37, N. Y.

*Pat. Pending

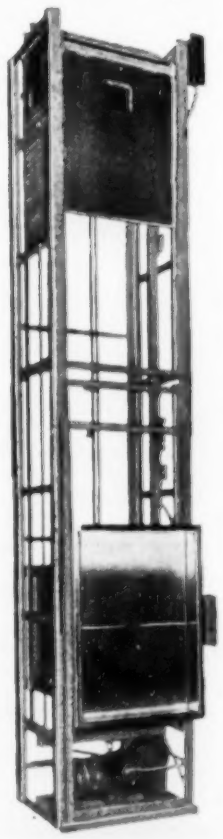
Send for Complete Literature

If you write maker identify as IEN - 9960

Doubly-Profitable Remodeling Tip:

install labor-saving

MATOT DUMB WAITERS



Space, time, labor and related savings are practically unlimited with MATOT "Not-so-dumb" dumb waiters—in factories, stores, institutions.

Only MATOT offers *extra* automatic features for faster service and trouble-free operation.

Hotels, restaurants, institutions, schools, industry and commercial buildings will profit with MATOT installations. Obviously, there's profit in such installations for you too.

MATOT Equipment Includes:

- Electric Dumb Waiters
- Hand Powered Dumb Waiters
- Hand Powered Elevators
- Invalid Elevators

See Sweet's File 33A for complete information, or write now for 8-page MATOT Catalog and Specification Guide.

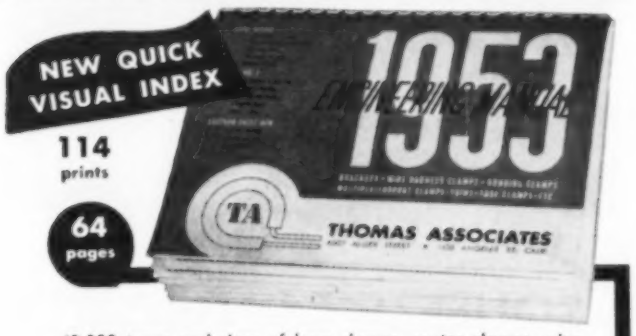
D. A. MATOT, INC.

1539 W. Altgeld St. • Chicago 14, Ill.

If you write maker identify as IEN - 9961

Send for Your Copy of This New

ENGINEERING MANUAL



40,000 types and sizes of loop clamps, center clamps, wire harness clamps, wave guide clamps, bonding clamps, multiple clamps, *plus* blocks, brackets, busbars, line supports, shims and related items.

Save design, tool and production time and expense with TA Standards. Clamp sizes range from miniatures of ⅛" on up to 6" diameter in 1/16ths for bolt mountings from #4 to ⅜". Available in aluminum, steel and stainless steel. Wide variety of cushioning materials for service from −130°F to +1200°F. New Engineering Manual *tells all*, lists many new items. For your free copy write Thomas Associates, 4607 Alger Street, Los Angeles 39, California.

THOMAS ASSOCIATES

Reg U.S. Pat. Off. Los Angeles, Calif. • Coffeyville, Kans. • Hagerstown, Md.

If you write maker identify as IEN - 9962

Here's the most complete line of wire-wound resistors on the market—a wider range of types, sizes, and ratings to fit your needs. There are fixed, tapped, adjustable, precision, and non-inductive resistors, with a variety of terminals and mountings. And, every one of these Ohmite resistors will give you long life and dependable, trouble-free performance.

OHMITE MFG. CO., 4813 Flournoy St., Chicago 44, Ill.

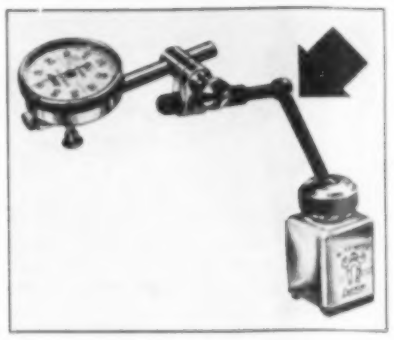
Write on Company Letterhead for Catalog No. 40

Be Right with
OHMITE
RHEOSTATS • RESISTORS • TAP SWITCHES

If you write maker identify as IEN - 9964

MAGNET . . Permanent magnet base and arm to position gage on a machine

Source: LUFKIN RULE CO.
1948 Hess Ave., Saginaw, Mich.



Standard indicator

New combination of the Miti-Mite permanent magnet base and adjustable arm, with the company's dial indicator, is available in three new base assemblies. The three provide holding pull that ranges from 50 to 100 lb. for application of any finished ferrous surface. The arm assembles in a swivel socket in the base. A friction joint provides for accurate adjustment. The base and arm, with the attachments but not the indicator, list at $8 to $16.50.

If you write maker identify as IEN - 9965

CLEANING . . Alkali compound for metal parts spray washing machines

Source: VAN STRAATEN CHEMICAL CO.
544-48 W. Washington St., Chicago 6, Ill.

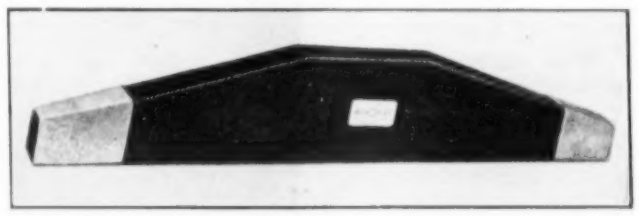
Non-flammable
non-toxic

Freedom from etching or discoloring aluminum work parts, ability to clean aluminum, copper, brass, ferrous metals, zinc, on one cleaning line, characterizes the new compound Vantrol 5541. The compound is employed in solution in a ratio of about 8 lb. to 100 gal. of water. It cleans quickly and acts to prevent corrosion of ferrous parts after they issue from the machine. It does not leave a residue in the machine that might require removal.

If you write maker identify as IEN - 9966

GAGE . . Granite straight edge to check machine beds, flat surfaces

Source: COLLINS MICROFLAT CO.
2324-28 E. 8th St., Los Angeles 21, Calif.



Scratches do not raise burrs

In addition to its line of layout plates made of granite, previously described IEN-1969-52, the company is now prepared to supply its Microflat straight edge in lengths of 24, 36 and 48 inches. Width is 2 in. for the first two sizes, 2½ in. for the 48 in. unit. Height is 4, 6 and 8 inches. The edge is straight to within 0.00005 inch. Each unit is equipped with leather grips and is supplied in a storage box.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

The "language of files and filing" is a necessary part of every good mechanic's education—whether he is "majoring" in a specialized type of operation or is assigned to miscellaneous work around the shop. The days of haphazard file selection and filing techniques are gone in modern shop practices. Parts finishing, assembling and fitting must take into account diversity of metals, degree of accuracy—and the speed necessary to keep production costs within bounds.

Nicholson file engineers study these factors and design files with tooth shapes, angles, sharpness and hardness to fit specific metals, methods and end results. With Nicholson, making files is a *science*.

If your industrial distributor handles Nicholson or Black Diamond brand files, he is well equipped to give your production heads helpful technical suggestions.

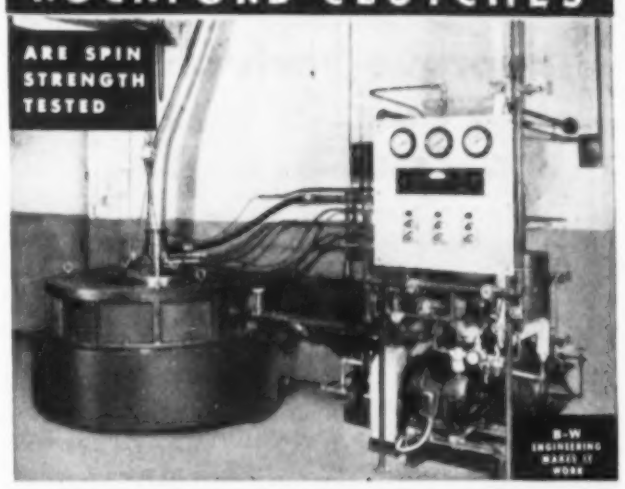
Free book, "File Filosophy"

NICHOLSON FILE CO. • 33 Acorn St., Providence 1, R. I.
(In Canada: Nicholson File Company of Canada Ltd., Port Hope, Ontario)

NICHOLSON U.S.A.
A FILE FOR EVERY PURPOSE

If you write maker identify as IEN - 9968

ROCKFORD CLUTCHES



To determine the bursting speed of ROCKFORD CLUTCHES, they are spun up to a high R.P.M. in this air turbine speed chamber. This test assures they will continue to perform efficiently at the speeds for which they were designed. Let ROCKFORD engineers devote the benefit of this and many other tests to your product's clutch design.

B-W PRODUCTION MAKES IT AVAILABLE

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

If you write maker identify as IEN - 9969

TAKES THE GRIND OUT OF GRINDING!

The CP Steel Clad Grinder takes the beatings of heavy industrial usage in its stride and with less maintenance. Spindle and motor housing are light weight steel clad construction for long life and operating ease. Constant speed governor and larger horsepower air motor holds wheel at most efficient cutting speed, from no load to full load, cuts grinding time—takes grind out of grinding! Available in five sizes from 4" to 8" grinders. Write for Catalogue 564. *Chicago Pneumatic Tool Co., 8 East 44th St., New York 17, N. Y.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 9970

Pattern Shown ⅓ Actual Size

GET BOTH WITH A.W. SUPER-DIAMOND

Where safety *and* economy are important, choose A.W. SUPER-DIAMOND Floor Plate. No other flooring gives you more foot safety, ease of maintenance, durability—at such low cost!

SUPER-DIAMOND's exclusive, engineered raised-diamond pattern puts 40 anti-skid traction points in every footstep. SUPER-DIAMOND is easy to clean with hose, mop or broom—has no cracks or corners to catch and hold dirt. SUPER-DIAMOND withstands hard blows and heavy loads—resists heat, fire and most chemicals. And you get all these advantages at *no premium price.*

Learn the facts about SUPER-DIAMOND foot safety and economy today. Mail the coupon for our newest booklet on floor safety.

A.W. SUPER-DIAMOND
ROLLED STEEL FLOOR PLATE

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send me, without charge, your latest booklet SD-43 on SUPER-DIAMOND safety.

Name _____

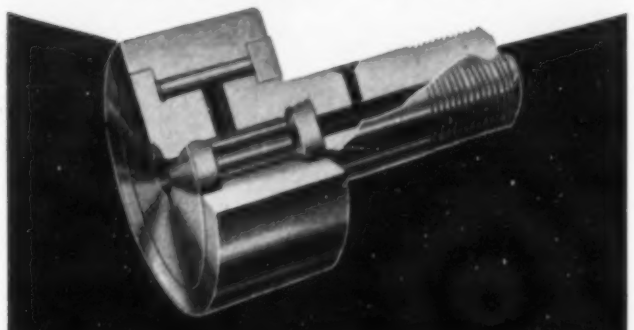
Company _____

Address _____ *City* _____ *State* _____

If you write maker identify as IEN - 9971

Improve Performance

of cam action with MULTIROL® Cam Follower Bearings



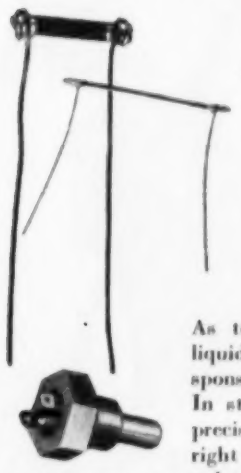
Multirol CF Series Bearings are designed especially to insure greater precision performance in any cam actioned bearing application. They are built to provide the ultimate in radial capacity, shock resistance, space economy and longer bearing life.

Send for McGill Catalog No. 52

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso, Indiana

If you write maker identify as IEN - 9972



Used in this typical application for sensing temperature of hydraulic oil.

just right for your job!

BENDIX-FRIEZ

BENDIX-FRIEZ high-precision thermistors

As temperature measuring elements and liquid level sensors, these temperature responsive resistors are the best you can buy. In standard or special types, their high-precision manufacture makes them precisely right for your job when it comes to resistance values, size, temperature coefficient, mountings and quality. Ask us about applications.

STANDARD TYPES FOR IMMEDIATE DELIVERY

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation

1428 Taylor Avenue, BALTIMORE 4, MARYLAND

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

If you write maker identify as IEN - 9973

NEARLY TWO MILLION NOW IN USE

FOSTORIA LOCALITES

for Machine Tools, Assembly and Inspection Benches

Industry's best tool for fast, accurate, comfortable "Seeing"

$6.12 EACH in package of 6. Single Units $7.65 Each

MODEL 3267-H-174 Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.

- **Rugged Construction** withstands vibration and rough handling
- **Instantly Adjustable** with flexible ball and socket joints
- **Reflector** accommodates 100 watt or any A-19 or A-21 medium screw base lamp
- **Baked Enamel Finish** — Exterior, smooth Gray — Reflector Interior, high temperature White
- **Wired Complete** with switch socket and 8-ft. oil-resistant cord and moulded plug

LOCALITE fostoria for Light ON the Job

Write for complete catalog of Localite models with various type reflectors, arms and bases for every industrial use.

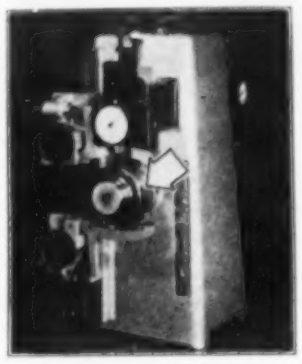
THE FOSTORIA PRESSED STEEL CORPORATION FOSTORIA, OHIO

Localites are available through wholesalers everywhere

If you write maker identify as IEN - 9974

GAGE . . Dial indicator assembly measures radial play in ball bearings

Source: SHEFFIELD CORP. 719-23 Springfield Ave., Dayton 1, Ohio



No skill required

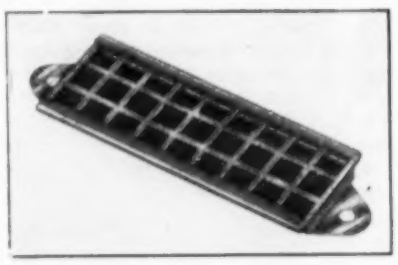
Two sizes are available in this new gage assembly to measure radial play in ball bearings. One takes bearings from 18 to 90 mm. in outside diameter. The other takes 90 to 180-mm. sizes. Interchangeable arbors mount the various bearing sizes. They fit in the bearing bore and are secured on the gage housing.

Air operated pivoted load bearing arms alternately exert pressure upward and downward on the bearing while successive movements are measured by the dial indicator on the outer ring to determine the radial play. Measuring load is adjustable to meet the standards set up by AFBMA.

If you write maker identify as IEN - 9975

STATIC ELIMINATOR . . Polonium grid emits alpha rays to neutralize charge

Source: NUCLEAR PRODUCTS CO. 10171-75 E. Rust St., Dept. 34, El Monte, Calif.

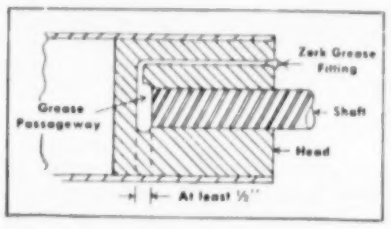


List is $14.75

Staticmaster is a new utility unit in the company's line of static eliminators, previously described IEN-13891-52. It measures 2⅝ in. in length without its mounting tips. It weighs 11 grams. Assembly consists of a strip of polonium in a stainless steel housing. When the grid is brought into close proximity to a surface it immediately neutralizes any static electricity that may be present.

If you write maker identify as IEN - 9976

Worn shafts can be replaced quickly in comparatively expensive rolls with the new Renu-Shaft roll design shown here.



Patents are pending on the design which employs press fitted shafts in the roll heads in connection with a well at the base of the shaft and a grease fitting and passage to the well from the roll end. The shaft can be forced out so a new one can be put quickly in its place by applying a pressure grease gun to the fitting. It is made by Rodney Hunt Machine Co., 48 Mill St., Orange, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9977

Femco COMMUNICATION

"YOUR VOICE OF ACTION"

Femco CRANEPHONES Talk from cab to floor and cab to cab

Femco AUDIOPHONES Fixed-point industrial communication

Femco PAGEPHONES Flexible inter-com and page systems

Femco PORTAPHONES Movable as your work progresses

Efficiency is improved—production goes up, when Femco equipment is installed. Consider: as many mike-speaker stations as you need, moving or stationary, anywhere in your plant, office or yard.

DEMONSTRATIONS ARRANGED

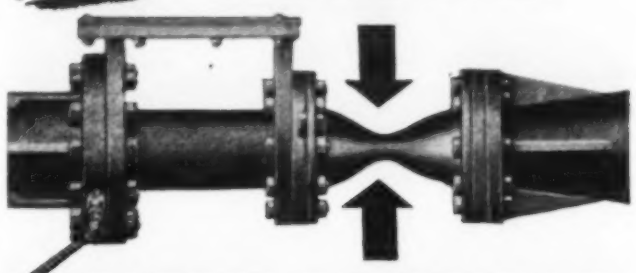
ASK FOR YOUR FEMCO DATA KIT

FARMERS ENGINEERING & MANUFACTURING COMPANY IRWIN, PENNSYLVANIA

SPECIALISTS IN ELECTRONIC Communication and Control

If you write maker identify as IEN - 9978

New! SIMPLEX SQUEEZE CONTROLLER



Accurately regulates flow of Sewage, Sludge, Trade Wastes—with no effect on moving parts!

A Simplex venturi tube, the most accurate form of primary device, does double duty—measures as it controls.

Special throat section is *flexible rubber.* If flow tends to change, motor-driven clamping device adjusts throat area—quickly returns flow to control point.

Throat section is self-scouring. Viscous fluids contact no moving parts.

Write for full details today! Simplex Valve & Meter Company, 6717 Upland Street, Philadelphia 42, Pa.

It's Simplex! It's Accurate!

SIMPLEX® VALVE AND METER COMPANY

If you write maker identify as IEN - 9979

a new catalog.... on FISHER/TAG

AND OTHER PETROLEUM TESTING EQUIPMENT

This new catalog completely describes the comprehensive line of Fisher/Tag and other petroleum testing equipment and provides a ready reference to important petroleum tests.

All the petroleum testing apparatus represented in this catalog for conducting tests outlined by the American Society for Testing Materials are in exact accordance with their specifications. When methods or specifications change, the necessary alterations are made to meet the latest ASTM specifications.

There are a great many testing instruments and apparatus for the petroleum industry available today. Know all about them through this very useful new free catalog.

Send for FREE Catalog FS-209-Q

FISHER SCIENTIFIC

717 FORBES ST. PITTSBURGH 19, PA.

If you write maker identify as IEN - 9980

Speed Up Production

Secure Greater Uniformity

Save Time, Labor, Fuel

with more than 2,000 manufacturers now using

ROSS INDUSTRIAL AIR SYSTEMS

DRYING . . . . . BAKING
CURING . . . . . COOLING
HEAT TREATING . . . AGING
CONDITIONING

ROSS PAINT FINISHING Systems insure complete coordination of all component parts—conveying, cleaning, rust proofing, dry-off, cooling, painting, baking, hardening. Long experience and outstanding facilities for designing, engineering, manufacturing and installing insure maximum production and operating efficiency with ROSS built equipment. Catalog on request.

J. O. ROSS ENGINEERING CORPORATION

MANUFACTURERS OF AIR PROCESSING SYSTEMS

444 MADISON AVENUE NEW YORK 22, N. Y.

Chicago • Detroit • Boston • Los Angeles • Seattle • Montreal

If you write maker identify as **IEN - 9981**

keep production materials moving with

ELECTROLIFT WORM DRIVE HOIST

Safer, smoother, faster action features of ElectroLift will keep your materials and loads moving economically. One-man, quiet operation. Wide selection of speeds, capacities and controls.

For further information consult your ElectroLift representative listed in telephone directory.

ELECTROLIFT

ElectroLift, Inc., 30 Church St., New York 7, N. Y.

If you write maker identify as **IEN - 9982**

PAY NO MORE FOR ALLENCO HOSE FITTINGS

AND *Save* ON

Replacement, leakage, down-time, etc.

ASK YOUR SUPPLIER

ALLENCO

ALSO *First* IN FIRE PROTECTION EQUIPMENT

ESTABLISHED 1887

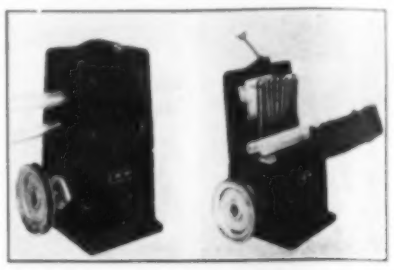
W. D. ALLEN MANUFACTURING CO.

CHICAGO 6 • NEW YORK 7

If you write maker identify as **IEN - 9984**

PUMP . . Compression finger unit maintains flow through resilient tubes

Source: SIGMAMOTOR INCORPORATED
526 N. Main St., Middleport, N. Y.



One or more fluids

The housing of this new design of the Sigmamotor pump, previously described IEN-6039-50, swings open to take one or more compressible tubes of various sizes. It applies a series of pivoted cam operated chromium plated fingers to progressively compress the tube. The action, comparable to "milking", moves the liquid in each tube forward.

The new assembly will handle 45 to 250 gph. with camshaft rotation at 500 rpm. The aluminum housing measures 12 in. in height. Drive connects at a 5-in. V-belt sheave on one side.

If you write maker identify as **IEN - 9985**

INSULATING . . Glass cloth coated with silicone, also seals

Source: MICA INSULATOR CO.
795-99 Broadway, Schenectady 1, N. Y.

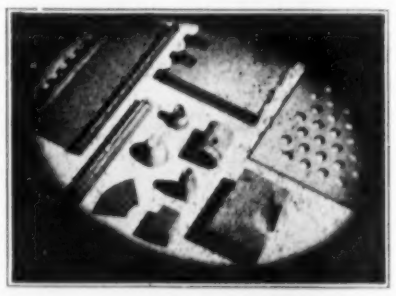
Data sheets upon request

Class-H is a new sheet material consisting of glass cloth and silicone coating. It is available in electrical and mechanical grades, the latter for application as gaskets, diaphragms, breaker strips, as well as for insulating. Dielectric strength is about twice that required by military specification MIL-C-2194A. Both grades bend readily, have high tensile strength. Addition of the silicone improves strength of the uncoated glass cloth.

If you write maker identify as **IEN - 9986**

CERAMIC . . For high temperatures, custom made to hold production work

Source: AMERICAN LAVA CORP.
653 Cherokee Blvd., Chattanooga 5, Tenn.

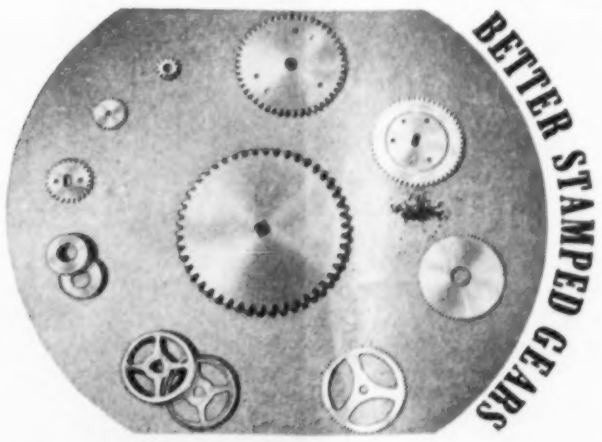


Test disc on request

AlSiMag 539 is a new custom made ceramic for use in fixtures, jigs, work holding devices on production lines for operations such as brazing, electronic heating, flame polishing, welding. It is suited also to make pins, pads, plates, spacers, kiln furniture, welding tip nozzles, molten metal strainers. The material can be heated white hot and quenched in dry ice without cracking or spalling. It is based on silicon carbide of relatively fine texture.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9987**



BETTER STAMPED GEARS

Save Up To 60% On Gear Costs

More and more manufacturers are saving a lot of money by using WINZELER *laminated* Stamped Gears. Now, for many applications, single stampings can be laminated and indexed to produce wider faces, at savings up to 60%! Greater skill and accuracy in tooling, stamping and assembling assures smoother, quieter operation. Avoid assembly headaches, delays, downtime, waste. Get the *uniform* quality only WINZELER Stamped Gears can give!

***WRITE FOR FREE** folder describing our facilities, assemblies, and various Stamped Gears. Includes data and tables. Samples, ideas, quotations, for the asking.*

WINZELER *Stamped Gears*

WINZELER MANUFACTURING & TOOL CO.
1712 WEST ARCADE PLACE, CHICAGO 12, ILLINOIS

If you write maker identify as **IEN - 9988**

They Measure Up to Every Job!

JOB-ENGINEERED ILLINOIS GLOVES

No matter what the industry, Illinois Gloves will fit it! Illinois... giving greater safety, longer life, perfect fit! There's an Illinois Glove engineered for most every job now, but if you have a special glove problem, write us! We'll work with you to design the glove for it!

RECONDITIONING MEANS SAVINGS! Illinois Gloves are made strong, take reconditioning easily, come through stronger, good as new! Write about our own reconditioning process!

Send for catalog!

ILLINOIS GLOVE CO.
Sales Office: 1501 Fairfax Trafficway Bldg. D, Kansas City, Kansas

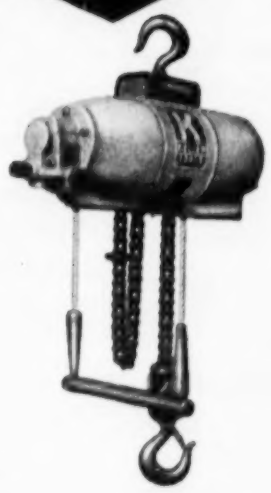
ILLINOIS GLOVE CO. CHAMPAIGN, PANA, EFFINGHAM

If you write maker identify as **IEN - 9989**

KELLER Air Hoist

Sensationally Different

can't burn out *when stalled*



Positive displacement piston-type air motors assure accurate control of the load.

Lifting and lowering speed can be anything desired from 0 to 17 fpm. Permits accurate spotting.

Weighs less—1,000-lb hoist weighs only 30 lb—one man can carry it up and down a ladder.

Air motors rated for continuous duty—can't burn out, even if stalled all day!

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as **IEN - 9990**

SHENANGO *Centrifugal* CASTINGS ... KEY TO SAVINGS

SHENANGO means it's right... not almost right!

1) Machined parts must be finished precisely as you specify. Shenango's modern machining facilities and skilled workmanship make this operation almost a work of art.

2) *Parts start out RIGHT, too,* because they are produced by Shenango's advanced centrifugal casting process. This assures *tougher* parts with finer, pressure-dense grain, greater tensile strength, better elongation and freedom from sand inclusions, blowholes and other hidden defects.

You specify the part, metal and finish and Shenango does the rest. Send for Bulletin No. 150 covering nonferrous metal parts; Bulletin No. 151 covering Meehanite Metal, Ni-Resist and special iron alloys. *Address . . .*

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO

ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN - 9991

better paint job with Red Devil Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion (22 shakes per second) puts pigment in perfect suspension—quick!

NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

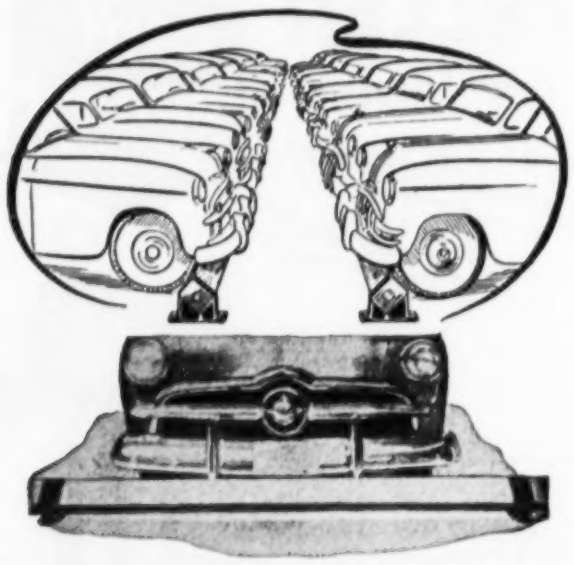
If you have hard-to-mix, *or hard-to-keep-mixed blends,* Red Devil can arrange to have test samples agitated at a nearby location.

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of 1950 **Red Devil Tools.** 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN - 9992



SALIENT FEATURES OF HAR-BAR BARRIERS

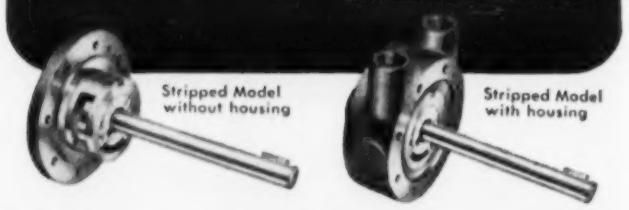
1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 · INDIANA

If you write maker identify as IEN - 9993

COMPACT automatic reversing vane pumps



You can make these compact pumps an integral part of your machines. They're automatic reversing . . . discharge in one direction, supply coolant or lubricant continuously regardless of shaft rotation. Direction of discharge changed easily in field.

Brown & Sharpe Automatic Reversing Vane Pumps in *Stripped Models without housing* offer minimum projection from machine surfaces . . . designed for use when suction and discharge ports can be incorporated in machine castings. *Stripped Models with housings* are easily installed when ports cannot be designed into machine, or when outside piping is desirable. *Complete pumps also available.* Sizes: 2½, 5, and 11½ gpm.

Write for Bulletin. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A. Buy through your local Distributor.

Brown & Sharpe BS

If you write maker identify as IEN - 9994

CALCULATING . . Electronic machine "remembers" several months production

Source: INTERNATIONAL BUSINESS MACHINES CORP. 590 Madison Ave., 18th Floor, New York 22, N. Y.

High speed data processor

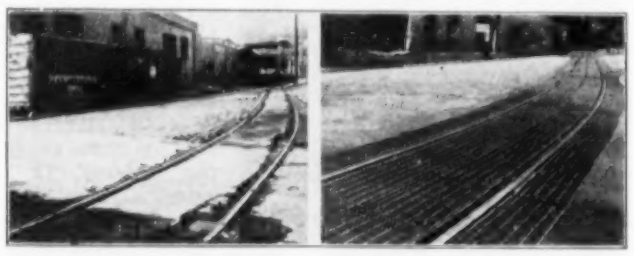
Magnetic Drum Calculator, Type 650, is a new data processing machine consisting of a magnetic drum unit with electronic calculating components, an input and an output unit and a converter. The calculator occupies about the same area as two ordinary office desks and a filing cabinet. It has 20,000 memory positions and can accept a maximum of 2,000 individual operating instructions. It will accumulate 10 digit numbers to form a 20-digit total at the rate of 200 per second.

The machine can "remember" several weeks or months of production schedules of finished products. At the same time, it will calculate, at high speed, the number of parts required for their production. It can take into account various factors involved in production and indicate dates on which orders must be placed so each part will be available on schedule for the production operation.

Operations are controlled through a "program" that can be entered automatically from punch cards or manually from the operator's console for storage in the form of magnetized spots on the surface of a drum measuring 4 in. in diameter by 12 in. in length. This drum rotates at 13,000 rpm. Input rate is 200 punch cards per minute. There is a separate output of 100 cards per minute. The operator can insert instructions or data manually at any desired storage location. He can examine the contents of these locations, stop the calculation at any required point and begin calculation with any desired instruction located in the memory unit.

If you write maker identify as IEN - 9995

Railroad crossings over concrete roads, carrying truck traffic, are improved inexpensively by applying grating as



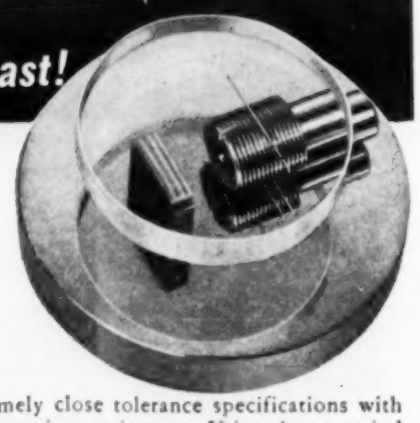
shown in the illustration. This installation uses Electroforged grating by Blaw-Knox Company, 2050 Farmers Bank Bldg., Pittsburgh 22, Pa. The grating is designed for 20-ton loading.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9996

Measure in Millionths with LIGHT WAVES

It's Easy...Fast!



Determine Surface Flatness At a Glance

Meet today's extremely close tolerance specifications with modern scientific measuring equipment. Using Acme optical equipment, it is as easy to measure to millionths of an inch, as it is to measure in tenths with a micrometer. Make your measurements via light waves with Acme equipment. Write for complete information.

Acme Scientific Company
manufacturers of optical flats and monochromatic lamps...mold polishing
1448 West Randolph Street • Chicago 7, Illinois

If you write maker identify as IEN - 9997

Maintenance Worries End

WHEN REPLACED PARTS ARE POLYPENCO *Nylon*

ROD STRIP TUBING

. . . it's tougher, lasts longer, resists abrasion, permits closer tolerances—can be speedily machined!

Next time worn or damaged parts must be replaced, make them economically in your own plant from standard *Polypenco Nylon* rod, strip or tubing stock. It's a tough material with many unique advantages that assure the top performance you want. Let us show you how easily you can produce replacement parts by using the proper *Polypenco Nylon* stock . . . or have us fabricate them for you to your own specifications.

IDEAL MATERIAL FOR Gears, Bushings, Valve Seats, Heat Insulators, Gaskets, Bearings, Rollers, Coil Forms, etc.

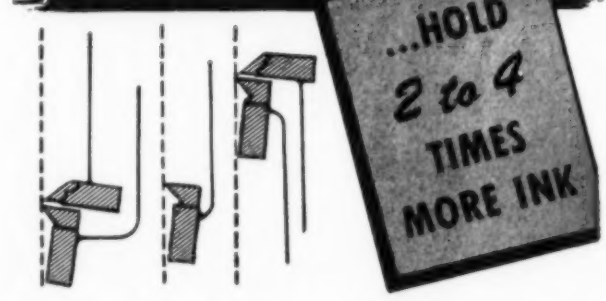
Write for Latest Bulletin on . . .

Polypenco® NYLON

The POLYMER CORPORATION of Pennsylvania Reading, Penna.

If you write maker identify as IEN - 9998

BETA CHART PENS



Beta Fountain Pens hold two to four times the ink of ordinary chart inking pens. Regardless of the line thickness Beta Pens produce a smooth unbroken and uniform line. Pens shown are approximately actual size and can be arranged to reduce time interval between static and differential lines to only a few minutes. Beta Pens are especially suitable for seven day records. Price **$1.10** (lower prices in quantities).

Send for bulletin No. 110.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

Available for Early Delivery

If you write maker identify as IEN - 9999

NEW SEALER HOLDS THEM!

Prevents Leaks . . . Protects Surfaces

This newly-developed polyhydroxylated plastic sealer adheres to any surface. Does not become hard or brittle. Holds at joints under 2,000 lbs. pressure. Use as a protective coating or as a pipe joint compound. Holds these chemicals and many others:

Dries but doesn't harden. Stays flexible.

- → VARSOL
- DRIP OIL
- CARBON TETRACHLORIDE
- → TRICHLORETHANE
- CHLOROBENZENE
- ETHYLENE DICHLORIDE
- → TRICHLORETHYLENE
- TRICHLOROBENZENE
- BENZENE
- → XYLENE
- BUTANE
- PROPANE
- → HEXANE
- PETROLEUM NAPTHA
- SILICONE OILS
- → PETROLEUM OIL
- TOLUOL
- GLYCERINE
- → SULPHUR DIOXIDE
- → WATER
- "FREON"
- METHYLENE CHLORIDE
- → METHYL CHLORIDE
- PERCHLOROETHYLENE
- ORTHO-DICHLOROBENZENE
- → CUMENE
- CYMENE
- GASOLINE
- → JET ENGINE FUELS
- FORMALDEHYDE
- VEGETABLE OILS
- → KEROSENE
- COAL TAR CHEMICALS
- PAINT SOLVENTS
- → MOST NON-POLAR SOLVENTS
- CHLORINATED SOLVENTS
- AROMATIC SOLVENTS
- → AMMONIA

Leak Lock

Comes in 1½ oz. tubes (dozens), pint cans and 10 lb. cans. Order from your supply house. Highside Chemicals Co., 10 Colfax Ave., Clifton, N.J.

1. USE AS A PIPE JOINT COMPOUND . . . .
2. USE AS A PROTECTIVE COATING . . . . .

If you write maker identify as IEN - 10000

If you write maker identify as IEN - 10001

SPIRALWOUND

World's most popular type metal-asbestos gasket

● Spirally wound Type Gaskets deserve their popularity because they offer a built-in resiliency, for safe seals with lighter boltloads, that no other gasket type offers.

Ajax Spiralwound Gaskets are made for all standard pipe flanges and for manholes, handholes and tube caps of all makes of stationary and marine boilers, waterwalls, economizers, and other boiler accessories.

They are available in plated low-carbon steel or stainless with fillers of Canadian or blue African Asbestos or chemically inert duPont Teflon.

Ask your Industrial Distributor or write—

UNITED STATES GASKET COMPANY

FABRICATORS OF "TEFLON" & "KEL-F" FOR THE CHEMICAL PROCESS & ELECTRONIC INDUSTRIES
CAMDEN 1 NEW JERSEY

Representatives in Principal Cities Throughout the World

If you write maker identify as IEN - 10003

BUILDING . . Translucent sheet for windows, skylights, partitions

Source: INTERNATIONAL MOLDED PLASTICS INC.
4385-89 W. 35th St., Cleveland 9, Ohio

Shatterproof

Press molding characterizes new design of the Structoglas translucent plastic sheet that is available for use interchangeably with flat and corrugated building sheets made of steel, aluminum, asbestos. The polyester plastic is reinforced with glass fiber. It diffuses soft glare free light over large areas. At the same time it is highly resistant to impact, can be worked with ordinary hand tools and bolted or nailed in place. Sash that has been rusted out or warped can be replaced with the panels. Flat sheets can be employed for permanent reglazing of broken window panes.

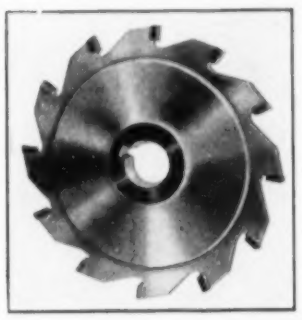
The material can be employed also in the place of conventional interior walls and partitions to provide privacy with decorative effect and light transmission. The sheet makes a sanitary maintenance free partition construction for washrooms. It will not absorb moisture and will not stain.

Standard sheets range from 3 to 14 ft. in length and from 26 to 42 in. in width. The corrugated material has actual pitch ranging from 1.25 to 4.2 inches. Colors are yellow, blue, orange, ivory, green in translucent design. They include emerald, red and yellow in opaque design.

If you write maker identify as IEN - 10004

SAWING . . Circular blade, carbide tipped for high speed slitting

Source: NELCO TOOL CO.
264-68 Center St., Manchester, Conn.



37 blades in line

The body of this new slitting saw is reinforced, as shown in the illustration, to prevent shearing stresses that could cause shattering at high operating speeds. The body is made of alloy steel and is built out to the width of the teeth which overhang the integral rim on both sides. The overhang eliminates need to grind both the steel and the carbide when the saw blade is being sharpened. The side clearance also provides room for chips. The reinforced hubs are ground and the center hole is honed.

Series 100, to cut steel, ranges from 3 to 6 in. in diameter and from 3/32 to ¼ in. in width. These saws, 12 in the series, have 8, 10 or 14 teeth. Series 300 is designed to cut cast iron, brass, copper and bronze. There are 13 in this series ranging from 3 to 8 in. in diameter and from 3/32 to ¼ in. in width. They have 6, 8, 10 or 12 teeth. Series 400 includes 12 blades from 3 to 6 in. in diameter and 3/32 to ¼ in. in width. They have 4, 6 or 8 teeth and are designed to mill aluminum, magnesium, and non-metallic materials. Each blade is cadmium or copper plated for identification and to prevent corrosion.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10005

Why Shipping Labels? PRINT DIRECT

Speeds Up Freight Marking

Eliminate the cost and time of pasting on labels. Print direct . . 1000 or more clear, sharp copies without re-inking. Prints practically anywhere . . postcards, tags, labels, boxes, cartons, packages, menus, forms, letters . . paper, cloth, wood. Just type, write, trace or draw on inexpensive stencil . . snap it on duplicator . . and print—like using a rubberstamp. New pre-die-cut "FORM-CUT" stencil prints shipping form and identification data in one operation.

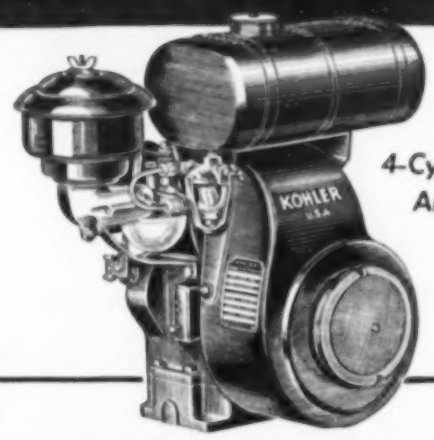
THE ORIGINAL HAND STAMP STENCIL DUPLICATOR

Portable . . non-mechanical . . of non-corrosive metal . . replaceable ink pads . . complete outfits: $9.50 to $99.50, including supplies (f. o. b. factory). Write for literature or see your office or shipping room supply dealer.

OVER 30 YEARS **MULTISTAMP** STENCIL DUPLICATOR

If you write maker identify as IEN - 10006

KOHLER ENGINES



4-Cycle Air-Cooled

Power for garden tractors, mowers, pumps, sprayers, snow removal equipment, elevators and hoists, mobile saws, concrete mixers, compressors, feed grinders, industrial and lift trucks, and a wide range of tools and equipment for industry, construction, farm and home.

Engineered and built to the quality standards that have won acceptance for Kohler Electric Plants the world over. Write for information.

Kohler Co., Kohler, Wisconsin. Established 1873

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 10007

NOW *from a single source*
A COMPLETE PACKAGING SERVICE
—Carload to Parcel Post—

GERRARD offers Round and Flat Steel Strapping	Automatic Twine Sealing Bag Ties Tackers • Staplers

GERRARD'S Complete Packaging Service includes:

Round Steel Strapping From 8 gauge for carload reinforcement and palletizing to 18½ gauge for light weight and parcel post packages. May be applied with either hand-operated or semi-automatic Gerrard machines.

Flat Steel Strapping In five heavy duty sizes for palletizing and carload reinforcement. Applied with a completely new line of Heavy Duty Flat Steel Strapping tools.

Automatic Twine Sealing With twine in weights for bundling mail, small parts, cartons, and a wide variety of light materials. The Gerrard Twine Sealer fastens the twine with a slip-proof metal seal.

Bag Ties 12 to 21 gauge wire for tying bags of every material and for bundling posts, rods, pipe, and numerous other applications.

Tackers and Staplers In 7 models for both general and special uses.

Contact a Gerrard Packaging Engineer, or write for free literature about any or all phases of our Complete Packaging Service.

Gerrard Steel Strapping Division, United States Steel Corporation
4701 South Richmond St., Chicago 32, Ill.

USS **GERRARD STEEL STRAPPING**

UNITED STATES STEEL

If you write maker identify as IEN - 10008

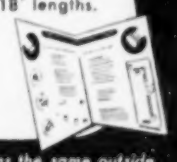
FOR SPEEDY INSTALLATION . . . WITH MINIMUM INTERRUPTION OF WORK . . . . .

Count On **CLOW** (Threaded)* **CAST IRON PIPE**

WHEN YOU REPLACE OR EXPAND. Leading engineering firms specify Clow Threaded Cast Iron Pipe for downspouts, waste and vent lines because of its corrosion-proof qualities and lifetime service.

Clow Threaded Cast Iron Pipe can be cut and threaded on the job with ordinary tools of the piping trade. Available with plain or threaded ends in 3, 4, 5, 6, 8 and 10" sizes in 18' lengths. Also furnished with integral calking hub on one end (other end plain) in 4, 6 and 8" sizes.

Write for Form 4-26-50 to: JAMES B. CLOW & SONS, 201-299 N. Talman Ave., Chicago 80, Illinois.



*Has the same outside diameter as steel or G.W.I. pipe

JAMES B. CLOW & SONS
Wholesale Distributors of Pipe, Valves and Fittings for Industrial Use

If you write maker identify as IEN - 10009

JOHNSON BAND SAW

MODEL J
10" x 18" Capacity

It's BIG, It's RUGGED
It's Made Right
AND THE PRICE IS
SURPRISINGLY LOW
WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 10010

Hear Here!

Loudness Reduced 50%*
Inside a BURGESS-MANNING ACOUSTI-BOOTH

In the hushed interior of this roomy, airy acousti-booth you hear easily while telephoning. Walls of thick, sound absorbing material, and patented construction reduce the loudness of noise by 50%.

When you invest in a Burgess-Manning Acousti-Booth you are purchasing better communications . . . good hearing means fewer errors.

Model 211
Floor Booth

** Based on studies by a prominent research organization.*
Write for Bulletin A-107

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 10011

CLEVELAND Top Quality FASTENERS
The Cleveland Cap Screw Company
2917 East 79th Street Cleveland 4, Ohio
Warehouses: Chicago, Philadelphia, New York, Providence
ASK YOUR JOBBER FOR CLEVELAND FASTENERS

For Your Special Information

ALL MAKERS ARE LISTED IEN S-30

Many new subjects will appear in Thomas' Register this coming year as the "big book" keeps pace with product development. Our circulation department tells us that orders are arriving from manufacturers who want to be certain that they have the latest copy just as soon as it becomes available. We suggest that you consider the advisability of placing your order now to make certain of your copy, if you want the up-to-date reference source to all makers of all products.

VOLUNTEER NOW IEN S-31

A citizen army, two million strong, goes into action in October to insure the Nation's health and welfare for the year to come. Men and women, volunteers in a united campaign to raise money for some 17,000 Red Feather services, will solicit their fellow citizens and each other for contributions to home town agencies and national health and welfare programs.

This once-a-year campaign for the Community Chests and the United Defense Fund insures these services that are vital to all of us. Volunteer your time now to your town's United Red Feather Campaign.

EXPOSITIONS IEN S-32

Instrument Society of America will hold its Eighth National Instrument Conference and Exhibit at the Morrison and Sherman hotels in Chicago on September 21 to 25. The exhibits will cover 34,000 sq. ft. of floor space and will be the largest for the Society to date.

National Electrical Industries is scheduled for its Second Annual Exposition on September 29 to October 2 at the 69th Regiment Armory in New York City. Adequate electrical wiring for business and home is the theme. About 125 electrical manufacturers will display new product developments stressing electrical safety in commercial, industrial and residential buildings.

The Metals Show will open on October 19 to 23 in the Public Auditorium in Cleveland. It is one of the largest of the expositions of industrial materials and equipment. It merits careful planning if you are to cover it thoroughly. Several hundred manufacturers will be showing their new products for your use in the coming months.

The Chemical Industries Exposition is scheduled for November 30 to December 5 at Convention Hall in Philadelphia. This exposition, like the Metals Show, is one of the major ones, well worth all of the time and study you can give it.

Best U. S. Investment:
United States Savings Bonds

If you write maker identify as IEN - 10012

Keep your plant cleaner with

INVINCIBLE VACUUM CLEANERS

Invincible Light, Portable—1½ H. P

These Invincible features insure outstanding performance: 1. Multi-stage turbines produce plenty of power. 2. Positive Separation precedes vacuum producer. 3. Reach *every* surface with attachment tools. 4. Also recover scores of industrial materials. 5. Compact, portable; no interference with production. 6. 15 models from ½ to 5 H.P. 7. Larger models can be operated continuously. 8. No dirt or abrasives ever touch moving parts . . . *Over 100,000 Invincibles in use—5,000 for over 25 years. Send for free bulletin.*

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 10013

BRAZING BOATS and TRAYS

For faster, dependable brazing with fewer rejects, hold parts or assemblies firmly in place on specially designed boats or trays of Stackpole carbon. Almost any desired shape or size can be supplied. Brazing alloys will not stick to them. Stackpole carbon supporting fixtures withstand severe thermal shock, permitting quick cooling and assuring exceptionally long life.

Write on letterhead for Catalog 40A.

STACKPOLE
STACKPOLE CARBON COMPANY, *St. Marys, Pa.*
EVERYTHING IN CARBON BUT DIAMONDS

If you write maker identify as IEN - 10014

only RED-E Anti-Friction CENTERS are Superaccurate!

For Light, Medium and Extra Heavy Work on Tubing and Larger Center Holes.

• The world's finest centers are RED-E . . . each type the result of engineering know how, backed up by nearly 50 years of experience. The "Shank" and the "Ball & Roller" Type centers illustrated are just a few of over 200 exclusively designed centers available.

Ask for Catalog "B" (Pipe and Bull Nose Centers), "C" (Anti-Friction Centers), "D" (High Speed—Carbide Tipped Centers).

CENTER *Specialists Since 1908*

RED-E TOOLS **READY TOOL COMPANY**
544 Ironiston Ave. • Bridgeport 5, Conn.

If you write maker identify as IEN - 10015

YOUR BEST DEFENSE *Against* **EYE** *Injuries*

the SAF-I-SPEC

- Featherlite Comfort and Smart Appearance assure employee acceptance.
- Low cost replaceable Optilite® lens.
- Fit over personal glasses.
- Meet Federal Spec. for impact and optical qualities.

Write for Literature and Prices

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 8, MISSOURI BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto — Montreal

If you write maker identify as **IEN - 10016**

SURETY'S SURESEAL INDUSTRIAL GLOVES

TURN-CUFF OR STANDARD GAUNTLET

- 10 Times higher abrasion resistance in standard abrasion tests.
- 4 Times higher snag resistance in standard puncture tests.
- Turn Cuff style with no-drip feature and 2-inch longer gauntlet.
- Surety's Sureseal synthetic rubber gives you much higher resistance to industrial chemicals than either natural rubber or standard synthetics.

Phone your jobber or write direct.

THE SURETY RUBBER CO. CARROLLTON, OHIO

If you write maker identify as **IEN - 10017**

THERE'S A STURDY BURKE FOR EVERY PURPOSE

Thousands of efficient, low cost Burke Bench Millers are proving their superiority in Tool, Development and School Shops and a wide variety of mass production operations.

Send for complete data on models attachments, accessories and suggestions for putting Burke's to work for your profit.

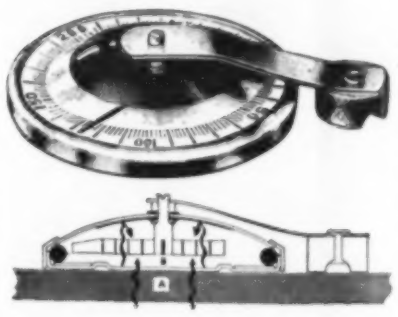
THE U. S.-BURKE MACHINE TOOL DIV.

Brotherton Road 5 Cincinnati 27, Ohio

If you write maker identify as **IEN - 10019**

THERMOMETER . . Mounts on surface of bearing, engine, motor, mold, pipe

Source: PACIFIC TRANSDUCER CO.
11919-23 W. Pico Blvd., Los Angeles 64, Calif.



List is $5.75

Illustrated is Model 310 of the company's new Pandux thermometer held by its permanent magnet clamp on a flat surface. It reads surface temperature to 300 deg. F. It is one of six units with ranges from minus 50 to 250 deg. F., 0 to 300 deg. F., 70 to 370 deg. F. and the equivalent centigrade ranges.

Application can be made with the magnet clamp or with a small quantity of silicone grease that holds firmly, does not melt and provides excellent thermal conductivity. Accuracy is within 2 deg. F. A mirror surface on the dial radiates heat so the thermometer is not affected by external radiation. Weight is one ounce.

If you write maker identify as **IEN - 10020**

RUBBER . . Sheet material can be seamed in electronic equipment

Source: B. F. GOODRICH CO.
448-52 S. Main St., Akron 11, Ohio

Tough and flexible

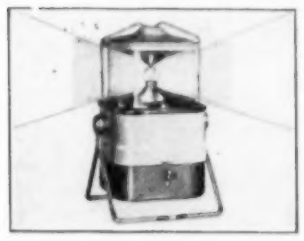
Vulcafilm is a new sheet material combining the properties of plastics and synthetic rubber. It can be assembled into shapes or vessels of any size by heat seaming in electronic equipment. The "welded" seams become stronger than the material itself.

The sheet can be employed alone or with added fabric support. It can be compounded for resistance to oil, gasoline, sunlight, heat, cold, abrasion, acids. Principal present application is in manufacture of oil tank diaphragms to prevent evaporative loss in stored petroleum products. The material has been made into pillows also to be placed with cargo and inflated so loads cannot shift.

If you write maker identify as **IEN - 10021**

LIGHTING . . Electric lantern also operates as a blinking signal

Source: JUSTRITE MFG. CO.
2059-63 N. Southport Ave., Chicago 14, Ill.



Signals danger

Life Guarder is a new electric lantern. It takes four standard flashlight batteries to deliver a red flashing beam that is visible in all directions. It also can be set to provide a steady white light after removing its red lens liner and switching off its flasher control. List price is about $5 without batteries.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10022**

If you write maker identify as **IEN - 10023**

Perform FOUR operations from a single setup

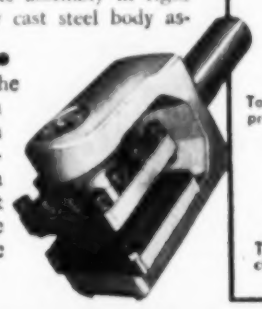
With this new Davis Tool Holder you can turn, undercut, bore and chamfer in one setup. It mounts four tools at once.

•

One simple wrench adjustment changes position through 360° in accurately indexed increments of 45°. Two index pins and a center pin locate and clamp the complete assembly in rigid alignment. Heavy cast steel body assures accuracy.

•

For details on the Davis 8-Position Tool Holder which will help you increase production with your present equipment, see your representative or write direct.



TYPICAL SERIES OF OPERATIONS ON A SINGLE SETUP

8-Position Tool Holder used in facing operation.

Tool indexed 90° to undercutting operation.

Tool indexed 90° to present turning tool.

Tool indexed 45° for chamfering.

If Davis can't bore it, it can't be done!

DAVIS BORING TOOL DIVISION

GIDDINGS & LEWIS MACHINE TOOL CO., Fond du Lac, Wis.

Builders of plain and micrometer adjustable block type boring tools; line boring bars; special boring tools; car wheel boring tools; planer, vertical boring and turning mill tools. Quick Change arbors and sleeves.

If you write maker identify as **IEN - 10024**

The new M·S·A SHOCKGARD does a double protection job!

The only Safety Work Hat designed especially for Linemen and Electrical Construction Workers. *No metal* in shell or lining. Molded entirely of special thermoplastic, the Shockgard sets up an effective guard against a minimum of 10,000 volts, which holds at temperatures of 30 degrees below zero to plus 175 degrees F. High resistance to impact, penetration. Streamlined; lightweight; comfortable; easily adjusted lining. Winter lining and chin straps available. Bulletin 0601-1.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES COMPANY
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pennsylvania
At Your Service: 68 Branch Offices in the United States

If you write maker identify as **IEN - 10025**

SPRAY NOZZLES

. . . FOR LOWER COST

Spray Nozzles alone can often materially reduce spraying costs. Spraying Systems Co. has proved this again and again. Write for Catalogs 22 and 23 . . . and see for yourself.

CLIP AND MAIL

SPRAYING SYSTEMS CO.
3208 Randolph Street • Bellwood, Illinois

☐ Send me Catalog No. 22 ☐ Send me Catalog No. 23

Name_____
Company Name_____
Address_____
City_____ State_____

If you write maker identify as IEN - 10026

Here's the way to handle heavy red lead-*Spray it!*

delivered direct from original containers with

NEW VERSATAL POWER RAM, JR.

This new Versatal pump hoist and follower plate combination delivers the heaviest materials – red lead, putty, open gear coating, caulking compounds – direct from the original 5 gallon containers, efficiently and uncontaminated. Saves time, materials and spoilage. Illustrated in use with Versatal 5-gal. pump.

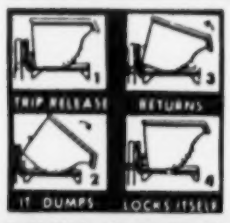
- No waste – no messy transferring of materials!
- Completely cleans and empties original container!
- Prevents pump failure by keeping pump out of dirt and grit!
- Follower plate fits all standard 5-gallon pails – any 11¼" diameter container!

Contact the Alemite Supplier nearest you – or write direct for complete FREE information. 1830 Diversey Parkway, Chicago 14, Ill.

SW ALEMITE Versatal SPRAY PUMP EQUIPMENT

If you write maker identify as IEN - 10027

SAVE 50% LABOR-TIME with ROURA Self-Dumping HOPPERS



Only ROURA Has The Exclusive PATENTED Instant Release Handle

Use Self-Dumping Containers – they pay for themselves

Fitting any standard fork or platform lift truck, thousands of ROURA HOPPERS are in constant operation handling wet or dry, hot or cold, bulky materials. Simple to operate—only one man is required for distributing and unloading—quicker and easier.

The ROURA HOPPER dumps, rights and locks itself securely by a simple lift of the patented release handle. Sizes ½ to 2 cu. yds. ROURAS can also be designed for flat trucks and in other sizes to meet specifications—can be equipped with special flanges to permit stacking for storage or future distribution. The ROURA will quickly pay for itself many times over. Write today for detailed brochure.

Imitated by Many—Not Equaled by Any

- SIMPLE
- SAFE
- SPEEDY

ROURA IRON WORKS, Inc.
1409 Woodland Ave. Detroit 11, Mich.

If you write maker identify as IEN - 10028

Solve Building Problems -- LARGE and small

Armco Steel Buildings are available in a wide range of sizes to meet your exact needs. Check their many advantages.

1. Quick erection. A small crew does the job in a matter of hours. Unique STEELOX construction provides both structural support and finished surface.
2. Long, maintenance-free life. Armco Buildings are rigid, weathertight, noncombustible. There is nothing to crack, warp or rot. Should your building be damaged the part is easily replaced.
3. Ideal for permanent or temporary sites. Changing conditions are no problem. If desirable, your building can be easily expanded with standard parts, rearranged or completely dismantled and re-erected on a new site without loss of material.

ARMCO DRAINAGE & METAL PRODUCTS, INC.
1803 Curtis Street, Middletown, Ohio

ARMCO

WRITE FOR THE COMPLETE MONEY-SAVING STORY

If you write maker identify as IEN - 10029

LAYOUT .. Granite surface plate for tool rooms and inspection departments

Source: TAFT-PEIRCE MFG. CO.
32 Mechanic Ave., Woonsocket, R. I.

Maintains accuracy

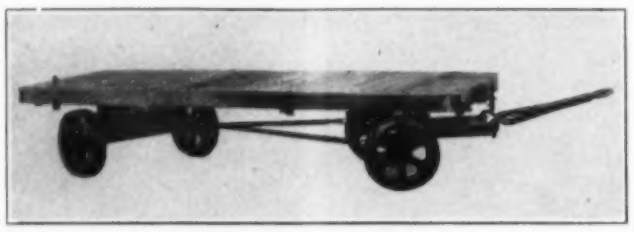
Blue-white Westerly granite, with grain angle at 45 deg. to the working surface, is employed in the company's new line of precision surface plates. Sizes range, at present, from 9 by 12 in. to 36 by 72 inches. The grain angle minimizes the possibility of chipping or plate breakage. The granite itself will not raise a burr if it is scratched but will remain exactly flat across the scratch itself.

Each plate is ground and lapped to a smooth precision surface. At the same time, the pores in the granite prevent "wringing" and so assure free movement. The plate is nonmagnetic and its blue-white surface finish assists in reading instruments. The surface can be cleaned with ordinary solvents such as alcohol or carbon tetrachloride. The granite is rust proof and so does not require oiling or protective covering against corrosion. Tools or work left on it are not subject to corroding.

If you write maker identify as IEN - 10030

TRUCK .. Four wheel platform unit, axles connected to "track" in a train

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.



Special sizes to specification

Swivel axles under the 4 by 10 ft. platform on this new 4-ton trailer truck are cross connected so the truck can be steered at either end and so it will remain in "track" alignment when several of the units ride in a train behind a tractor. The wood deck stands 24 in. in height on wheels fitted with 18 by 5-in. solid rubber tires. The wheels ride Timken roller bearings on the axles.

The truck frame is made of structural iron to support the hard wood deck. Countersunk metal hold-down strips keep the deck in place and present a smooth surface for loading and unloading. Stake pockets are included.

If you write maker identify as IEN - 10031

Electronic gage, employing X-ray, will be looking at tin plate as it travels along at high speed to indicate any variation, down to 0.000001 inch, in the tin thickness. It is being made by Applied Research Laboratories, Glendale, Calif., for James & Laughlin Steel Corporation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10032

"Photo—Courtesy Speer Carbon Company"

THE STRUTHERS WELLS

IMPREGNATOR

. . . with the Quick Opening Closure!

for Impregnating Electrical Coils, Aluminum or Magnesium Castings, Carbon Parts and Other Materials

Write for Bulletin B-30 (on your letterhead, please)

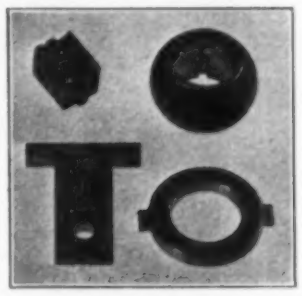
The improved Struthers Wells impregnating system illustrated—one of many recent installations—is heated with circulating hot oil, with a separate hot air system for preheating the charge before impregnation. Covers are quickly removed or installed—with great savings in operating labor. Furnished as bare units, or complete with piping, instruments and accessories. Heated by steam, electricity or circulating heat transfer medium.

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA.

If you write maker identify as IEN - 10033

SELF-LUBRICATING BEARINGS AND MECHANICAL PARTS

SINTRLOY — DUCTILOY — SEALALOY



SINTRLOY — Powdered Bronze Bearings are used by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

DUCTILOY — Powdered Bronze Bearings and Mechanical Parts to be used in heavy duty applications where greater strength and shock resistance are required.

SEALALOY—Powdered Bronze Material used for mating rings in rotating mechanical seals to give excellent wearing qualities and shock resistance. Manufactured to your exact requirements.

MAY WE QUOTE ON YOUR SPECIFICATIONS AND PRINTS? NO OBLIGATION.

NATIONAL MOLDED PRODUCTS, INC.
1945 Mill Street St. Marys, Pa.

If you write maker identify as IEN - 10034

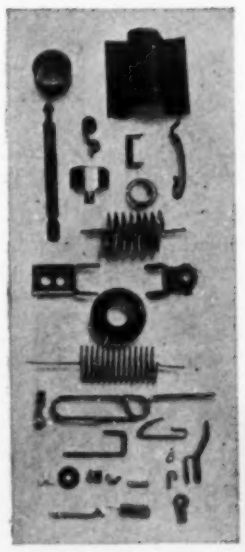
HERE'S A HOT TIP!

You can make your job of specifying and buying industrial truck batteries easier by writing for C & D's newest bulletin. It gives full details and specifications on C & D's complete industrial truck battery line. Ask for Bulletin IT-520.

C&D BATTERIES, INC.
of Conshohocken, Pa.
406 WASHINGTON STREET

If you write maker identify as IEN - 10035

Priced Right! WIRE FORMS & *Metal Stampings*



High-speed, quality production with custom-made precision. Wire formed to any shape for every need.

IMMEDIATE CAPACITY FOR DEFENSE SUB-CONTRACTS

STRAIGHTENING & CUTTING
Perfect straight lengths to 12 ft.
.0015 to .125 diameter

WIRE FORMS
.0015 to .125 diameter

SMALL METAL STAMPINGS
.0025 to .035 thickness
.062 to 3 inches wide

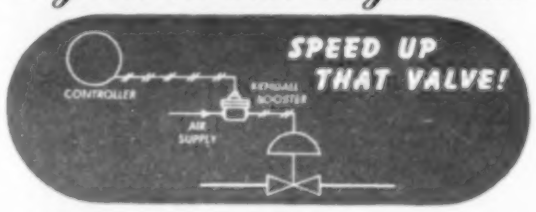
Specializing in Production of Parts for Electronic, Cathode Ray Tubes and Transistors

Write for illustrated folder
Send Blueprints or Samples for Estimate

ART WIRE and STAMPING COMPANY
2-G BOYDEN PLACE
NEWARK 2, N. J.

If you write maker identify as **IEN - 10036**

Engineered Air Regulation



We say—**It's easy and inexpensive to minimize valve response lag in even the biggest diaphragm motor or cylinder type actuator when a KENDALL Booster triggers the action.**

Prove our statement by testing this air volume amplifier on your most sluggish valve.

Write for Bulletin 4522 describing the Kendall Model 20 Precision Air Volume Booster with its

- **High capacity – both supply and relief**
- **Perfect balance against supply pressure changes**
- **Precise ratios**

Ratio No.	Loading Pressure	Output Pressure
1	Each 1 PSI	produces 1 PSI
1/2	" 1 "	" 1/2 "
1/3	" 1 "	" 1/3 "
2	" 1 "	" 2 "
3	" 1 "	" 3 "

KENDALL CONTROLS CORPORATION
144 MOODY STREET WALTHAM 54, MASS.

If you write maker identify as **IEN - 10037**

How to get longer life out of your portable cords and cables

1 USE junction or distribution boxes for making multiple power connections in working places.

2 PROTECT cables with fuses or circuit breakers of the proper rating for the service. Make sure that circuit breakers will operate properly.

3 PROTECT cables from being run over by heavy equipment. Running over the cable a few times may not cause immediate failure, but may do internal damage which will shorten its life. If the cable must be run across an aisle, place boards on either side as one would for a hose. If it is in use for only a short time, it should be thrown over the truck.

4 USE flame-resistant cables wherever possible.

5 DO NOT have portable cords and cables running over steam pipes or other heat-transmitting equipment.

6 KEEP cables away from sparking motors and high voltage equipment. The ozone generated by sparking commutators attacks rubber jackets, causing cracking.

7 AVOID overloading of cables. Where possible, use I.P.C.E.A. recommended current ratings.

8 AVOID dragging portable cords around rough edges or sharp corners. Bruises and cuts hasten deterioration of the jacket. Never yank cords to remove kinks or loosen them when caught on a projection.

9 AVOID running portable cables on pulleys or drums too small for the size of the cable; observe recommended I.P.C.E.A. minimum diameters.

10 KEEP cords away from oils and greases. If they do get into oil, they should be wiped off as soon as possible. Avoid having cords lie in pools of water, chemicals or grease.

11 BUY cables that can carry the required current without overloading or overheating. They should be flexible (have sufficiently fine strands) for the intended use.

FOR FREE REPRINTS, WRITE TO ADDRESS BELOW.

UNITED STATES RUBBER COMPANY

Electrical Wire and Cable Department
ROCKEFELLER CENTER • NEW YORK 20, NEW YORK

If you write maker identify as **IEN - 10039**

THERMOMETER . . For quick readings, employs a thermistor sensing element

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Chicago 18, Ill.

No waiting

Fastherm is a new battery powered bridge type instrument with a thermistor element mounted in a cage at the end of a retractable prod. The prod can be extended about 4 in. from the housing or retracted inside it. Weight, with the batteries, is about 2½ pounds. Dimensions of the plastic housing are 4 by 1½ by 5 inches. The indicating meter is 2 in. in diameter.

Model 328, the standard design, has a range from 60 to 90 deg. F. Other ranges can be specified, with a 30-deg. spread, between minus 20 and plus 200 deg. F. The two flashlight batteries have life in service of six months or more. List price is $187.50.

If you write maker identify as **IEN - 10040**

WELDING . . Oxy-acetylene rod for use on cast iron, coated or bare

Source: EUTECTIC WELDING ALLOYS CORP.
40-42 172nd St., Dept. P, Flushing 58, N. Y.

For strength and appearance

EutecRod 143FC is a welding rod for application with a torch in repair work on cast iron. It is a new addition to the company's low-temperature line. It flows out at a base metal temperature of 1,450 to 1,650 deg. F. The rod is supplied in ⅛ to ⅜-in. square sections.

If you write maker identify as **IEN - 10041**

SCREENING . . Motor driven riddle is mounted in a frame above a tote box

Source: RAMPE MFG. CO.
3318-22 St. Clair Ave., Cleveland 14, Ohio

List is $179

Screen Separator designates this new assembly of standard 24-in. foundry riddle and ball bearing ac. motor, both in a structural frame that also supports a tote box. Materials loaded into the riddle are screened into the tote box. The "larges" portion is removed from the top in a batch operation. Screen mesh can be specified. Stroke is adjustable to a maximum of 1½ inches. Dimensions are 37 by 29 by 24 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10042**

the most widely used Electronic Supply Guide

free

ALLIED'S COMPLETE 268-PAGE 1954 CATALOG

Send for It

World's Largest Stocks of ELECTRONIC SUPPLIES FOR INDUSTRY

Simplify and speed your purchasing of electronic supplies and equipment. Send your orders to us for quick shipment from the world's largest stocks of special-purpose electron tubes, test instruments, audio equipment, electronic parts (transformers, capacitors, controls, etc.). Our expert Industrial supply service saves you time, effort and money. Send today for your Free ALLIED Catalog—the complete, up-to-date guide to the world's largest stocks of Electronic Supplies for Industrial use.

One complete dependable source for everything in electronics

ALLIED RADIO
100 N. Western Ave., Dept. 14-J-3
Chicago 80, Illinois

If you write maker identify as **IEN - 10043**

Technical Information

Dimensions — Weights
Specifications — Grades
Analyses
OF
Babcock & Wilcox Seamless and Welded Stainless, Alloy and Carbon Steel Pipe

Send for Technical Data Card 138

TA-1773 (P)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as **IEN - 10044**

GENERAL PLATE
ALCUPLATE®
(Copper-Clad Aluminum)
Reduces Costs
OVER SOLID COPPER OR BRASS

ALCUPLATE Provides High Electrical Conductivity, Soft-Soldering Surfaces, Good Heat Dissipation, Light Weight

Now, you can reduce your cost 15–30% or more over an equal area of solid copper or brass by using General Plate ALCUPLATE.

Made by *permanently bonding* a thin layer of copper to one or both sides of thicker aluminum, ALCUPLATE has practically the same physical and electrical properties as copper, plus the light weight of aluminum. The copper provides an ideal surface for soft-soldering operations, electroplating and other finishes.

ALCUPLATE is widely used in the electrical and electronic fields for terminals, clips, shims, small motor housings, electronic component cases, chassis, and brackets. It is also used for heat transfer assemblies, fin and tube type radiators, printed circuits, costume jewelry and similar applications.

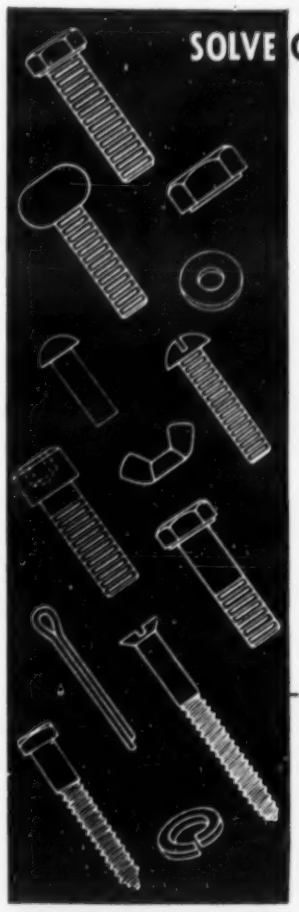
ALCUPLATE can be fabricated by stamping, drawing or forming. Its malleability permits its use in the manufacture of many parts from work-hardened rather than annealed or dead soft materials.

ALCUPLATE is available in coils and flat cut lengths, copper clad on one or both sides of aluminum, ⅛" thick x 13" wide and under.

Technical Data Bulletin No. 702C gives full details. Write for a copy, today.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
79 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as **IEN - 10045**



SOLVE CORROSION PROBLEMS!

Select HARPER
Everlasting Fastenings

Harper can supply corrosion-resistant fastenings to meet every need. Call Harper for bolts, nuts, screws, washers, rivets and special fastenings of brass, silicon bronze, naval bronze, Monel, aluminum, all stainless steels. Over 7,000 different items ready for prompt delivery. See your Harper Branch or Distributor or write for catalog.

HARPER

EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.

Name.....
Company.....
Address.....
City.....State.....

If you write maker identify as IEN - 10046

Dollar and Cents Angle

on Fafnir Sealed Ball Bearings

Figure it out yourself . . . you may be able to cut manufacturing costs by using one of the several types of Fafnir Sealed Ball Bearings.

These bearings simplify assemblies, cut out machinery operations and eliminate extra parts otherwise needed to provide and retain lubricants.

Find out . . . call in a Fafnir representative. The Fafnir Bearing Company, New Britain, Conn.

Mechani-Seal

Felt Seal

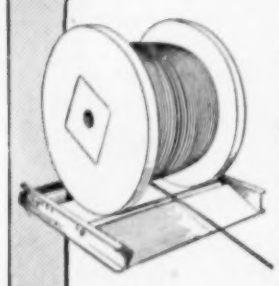
Plya-Seal

FAFNIR BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

If you write maker identify as IEN - 10047

Simple as A B C



Handle heavy reels easily and safely; remove wire or cable from top or bottom, front or back of reel with

ROLL-A-REEL

Low slanted front and positive front lock insure quick loading or unloading.

Eliminate jacks and cumbersome handling.

Style A: 2,000 lbs. cap. 37.50
Style B: 4,000 lbs. cap. 75.00
f.o.b. Cincinnati

Carried easily to reels, job or storage.

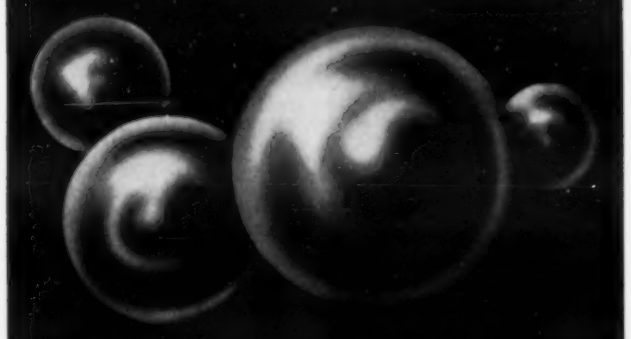
Sold through wholesalers only.

WRITE TODAY FOR DETAILS

ROLL-A-REEL
327 WEST FOURTH STREET
CINCINNATI 2, OHIO

If you write maker identify as IEN - 10048

On the ball for Quality



HOOVER BALLS

steel • brass • bronze
monel-metal
stainless steel

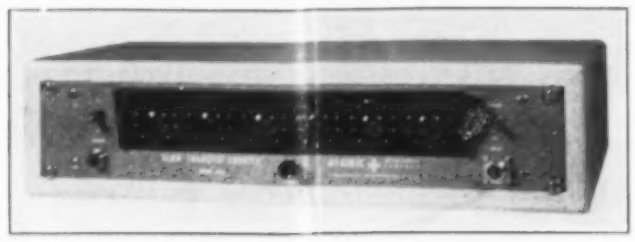
AMERICA'S FOREMOST BALL MANUFACTURER

HOOVER BALL AND BEARING CO.
ANN ARBOR, MICHIGAN

If you write maker identify as IEN - 10049

COUNTING . . Electronic instrument uses cold cathode glow transfer tubes

Source: ATOMIC INSTRUMENT CO.
82-86 Massachusetts Ave., Cambridge 39, Mass.



The tubes are made in England

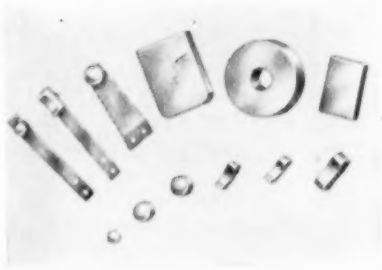
Six Dekatron cold cathode tubes are mounted in the panel face of this new instrument to provide counting capacity to one million at speeds to 5,000 cps. The instrument is known as Model 162A. Two can be run in cascade to accumulate counts in units of one million. The instrument will accept positive or negative impulses of 4 to 6 volts, the signal exceeding discrimination level for 1 microsecond or more.

Bright red neon glows opposite numbered circular spacings, indicating 1 to 10, around the end of each tube. This glow indication shows the accumulated count in units at one side and in hundred thousands on the other. Rack panel dimensions are 19 by 9 by 3½ inches. Weight is 10 pounds. List price is $295 with a cabinet.

If you write maker identify as IEN - 10050

CONTACTS . . Silver graphite for servos, calculators, midget motors

Source: STACKPOLE CARBON CO.
1942 Tannery St., St. Marys, Pa.



Separate contacts or assemblies

Sizes range upward from $\frac{1}{16}$ in. in diameter in a new line of silver graphite contacts and brushes for sliding contact duty on equipment such as servo mechanisms, radar antenna operators, calculating machines, midget motors. The contacts are characterized by low current resistance and ability to prevent "welding". The new units are employed with silver rings for minimum radio noise, with copper rings where radio noise is not a critical factor.

The contacts can be supplied in standard grades ranging from 5 to 80 per cent graphite, with silver backing to weld or braze into place, or with copper backing.

If you write maker identify as IEN - 10051

Television, closed circuit equipment, was employed recently in a demonstration of arc welding by Air Reduction Sales Co., 1656 Lincoln Bldg., New York 17, N. Y. DuMont's Tel-Eye portable self-contained TV camera was set up in the booth and connected to three large-screen receivers located 8 feet above the floor. Everyone had an excellent view.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10052

CHECK NOISE OF AIR OPERATED EQUIPMENT

. . . stops ear-splitting air blasts and vapor mists on air operated equipment

A few of the outstanding features are the ruggedized take-a-part metal construction — light weight — operates in any position — high ratio of radiation and vapor resistances. Broadly applicable on air cylinders, air motors, vacuum pumps, foundry and mill equipment, car lifts and many other air operated equipment where air must be exhausted.

- Available in ⅛" to 2" pipe sizes
- No additional piping required
- Withstands high range of working pressures

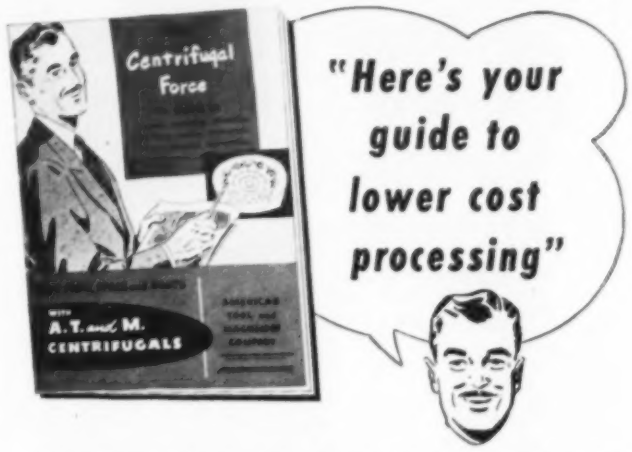
Write for complete details, ask for bulletin AW-1

Inquiries invited from distributors and O.E.M. manufacturers

ALLIED WITAN COMPANY
4315 W. 138 STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 10053

SAM SPINNER SAYS:



Throughout industry AT&M centrifugals are proving how they can cut the time and reduce the expenses of older processing methods. AT&M's free booklet, "Centrifugal Force," tells you how faster, better, lower cost results are assured in such processes as: *separation . . . extraction . . . impregnation . . . coating . . . precipitation . . . draining . . . dehydration . . . thickening . . . sedimentation . . . filtration.* This 8-page, illustrated booklet may show you how to solve your own processing problems — and save time, space and money. Write for your free copy of "Centrifugal Force" to American Tool & Machine Company, 1417 Hyde Park Ave., Boston 36, Mass.

SAVE TIME, SPACE AND COSTS WITH

A.T. *and* M.
CENTRIFUGING

If you write maker identify as IEN - 10054

AJUSTRITE

TRADE MARK

AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

RSC Models

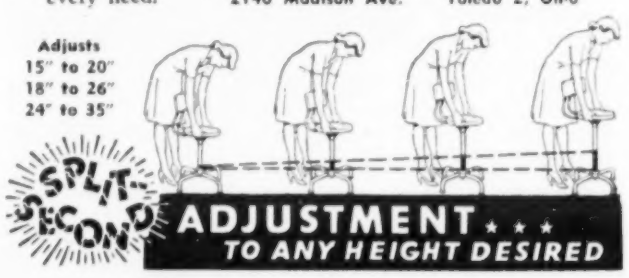
Size and style to fit every need.

Tops in factory, laboratory and school seating. Many leading industries have standardized on Ajustrite. Saves confusion among employees and eliminates maintenance. Has many advantages, high quality, no other like it. Try it in your shop *for 30 days.* Full information on request.

TSS Model

AJUSTO EQUIPMENT COMPANY
2146 Madison Ave. Toledo 2, Ohio

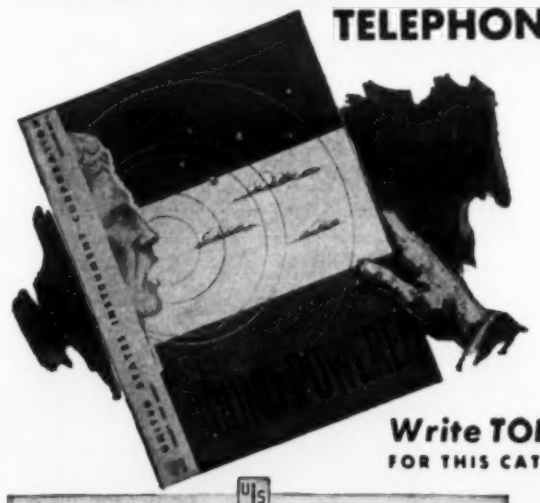
Adjusts
15" to 20"
18" to 26"
24" to 35"



If you write maker identify as IEN - 10055

Modernize your communications . . . without batteries

U. S. I. SOUND POWERED TELEPHONES



Write TODAY
FOR THIS CATALOG

Write Dept. D for Catalog

If you write maker identify as IEN - 10056

Performance is the Payoff! ...and

PITCHLIGN
Trade Mark

ROLLER BEARINGS
Out perform all others

PITCHLIGN'S performance potential leads that of all other comparable bearings. And for good reasons: (1) Roller alignment is applied at the extreme length where only a minimum of force is required to prevent skewing. (2) Roller alignment is controlled by a full-length, free-floating cage acting at the pitch circle. (3) Integral flanges of the heavy outer race guide and support the cage.

Write Today!

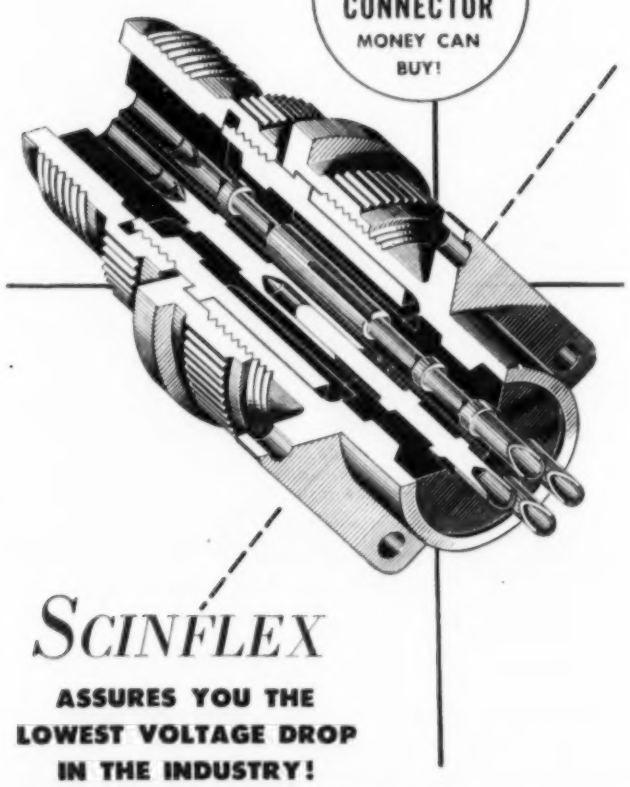
Ask for Bulletin SF-668

RBC

ROLLER BEARING COMPANY OF AMERICA
SULLIVAN WAY • WEST TRENTON, N.J.

If you write maker identify as IEN - 10057

The Finest ELECTRICAL CONNECTOR MONEY CAN BUY!



SCINFLEX

ASSURES YOU THE LOWEST VOLTAGE DROP IN THE INDUSTRY!

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX
ELECTRICAL CONNECTORS

Bendix

SCINTILLA MAGNETO DIVISION of
SIDNEY, NEW YORK

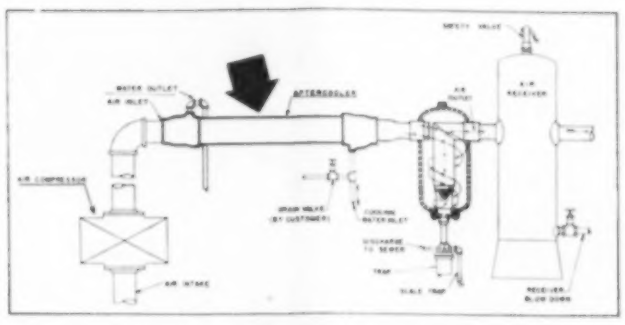
Bendix AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.
FACTORY BRANCH OFFICES: 118 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brouwer Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

If you write maker identify as IEN - 10059

COOLING . . Water cooled exchanger for aftercooler duty on a compressor

Source: HEAT-X-CHANGER COMPANY
46 Peaceable Hill Road, Brewster, N. Y.



Ask for illustrated Heat-X Bulletin

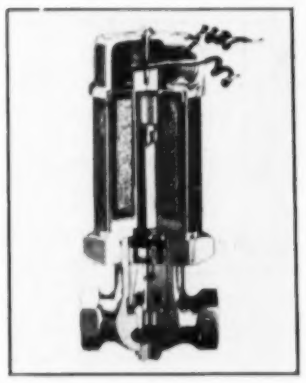
Four sizes rate 100 to 400 cfm. for a single-stage air compressor in the company's new Heat-X aftercooler. The same sizes rate 125 to 500 cfm. from a two-stage compressor. The unit cools the heated air from the compressor to within 10 deg. F. of the circulating water temperature. It causes the air to drop moisture and oil for removal through a separator and trap that the company also can supply.

Air connections are 1½ to 3 inches. Water connections are ¾ to 1 inch. The air passes through a bundle of tubes filled with longitudinal heat-conducting fins. The water surrounds the tube bundle inside the outer cylindrical housing. Rating is 50 to 125 lb. for the air and 125 lb. for the water. Consumption of water is about 2 gal. per hundred cubic feet of air. Overall length of the four sizes is about 56 inches. Housing diameter is 2⅜ to 4½ inches.

If you write maker identify as IEN - 10060

VALVE . . Solenoid operated provides adjustable closing interval

Source: ATKOMATIC VALVE CO.
543-47 W. Abbott St., Dept. 133, Indianapolis 25, Ind.



Particularly for steam

Free operation, without danger of sticking when handling steam, characterizes the construction of this new valve in the company's line of solenoid operated units, previously described IEN-13524-52. Provision has been made for expansion of the various parts within the valve. Clearance between the piston and cylinder walls compensates for expansion and the possible deposit of foreign matter such as boiler compounds, lime, iron oxide. The valve is available in sizes from ¼ to 3 inches.

Closing the solenoid circuit lifts the pin, opens the central port, permits escape of pressure so the plunger lifts and the valve is open. Opening the solenoid circuit permits the pin to return and close the central port. Then the valve returns to "down" position at a speed determined by the adjustable setting of the head port. The closing interval is maximum at 30 seconds. The new construction is available on valves in the line for pressure to 300 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10061

DUPLEX GEARED POWER

Twin Pinions share the load

Most Compact For Extra Low Speeds

TORQUE *is doubled*

LOAD *is equalized*

TYPE GL & GM

U.S. SYNCROGEAR MOTOR

5 to 84 rpm 1 to 25 hp *Request Bulletin*

U.S. ELECTRICAL MOTORS Inc.

BOX 2058, LOS ANGELES 54, CALIFORNIA MILFORD, CONN.

If you write maker identify as IEN - 10062

Cut Repeating-process Costs With Time Switch Control

- TSA-14 timer cuts waste, saves money
- Gives accurate, uniform operation
- Handles cycles from 10 sec. to 8 hrs.

Contact your nearest G-E sales office.
General Electric Co., Schenectady, N. Y.
603-134

GENERAL ELECTRIC

If you write maker identify as IEN - 10063

NEW

DODGE-TIMKEN
ALL-STEEL
PILLOW BLOCKS

Rugged! Compact!

BEARINGS for industry's *toughest jobs.* High radial and thrust capacities. Stamina for heavy shock loads. All-steel construction that packs this load-carrying capacity into less weight and less space than ever before. A joint engineering development by Dodge and Timken. Write for details and delivery dates or call your Dodge Distributor.

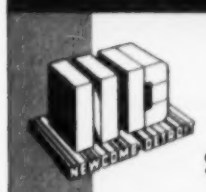
DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

If you write maker identify as IEN - 10064

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St.,
Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 10065

YOU BENEFIT 4 WAYS
when you insist on this mark

TRADE U MARK

CURTIS UNIVERSAL JOINTS

1. ***Availability*** — 14 sizes always in stock; ⅜" to 4" O.D., bored or unbored hubs.
2. ***Quality Standards*** — Curtis Joints set the standards for the industry; *uniform* high quality provides complete protection.
3. ***Simplicity*** — fewer parts, simpler construction, easy assembly and disassembly.
4. ***Constant Tests*** — catalog figures substantiated by constant tests on production joints in the factory for torque, tension and compression.

PLUS — facilities and engineering skill to handle special specification jobs always available.

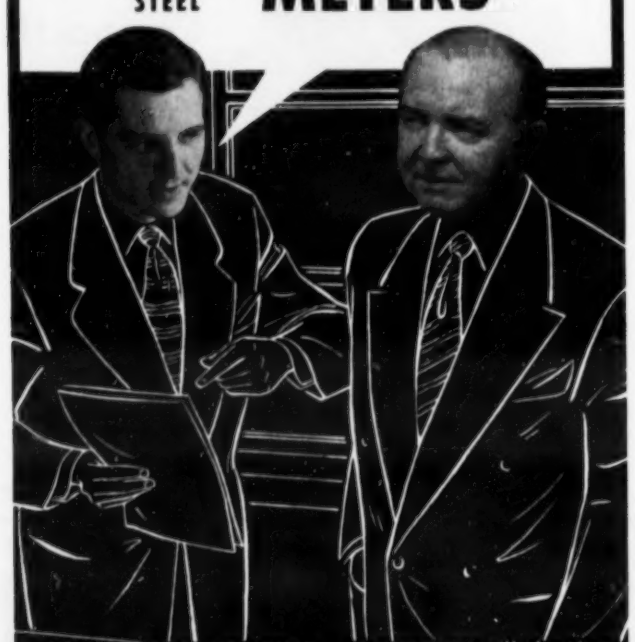
Not sold through distributors: write direct for free engineering data.

CURTIS UNIVERSAL JOINT CO., INC.
Trade U Mark
7 BIRNIE AVENUE
SPRINGFIELD, MASS.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 10066

"Measuring CORROSIVE LIQUIDS is no problem with NIAGARA STAINLESS STEEL METERS"



Whether you're measuring caustic soda, acids, molten sulphur or many other corrosive liquids, you want reliable measurement all the time. NIAGARA METERS — made of type 316 stainless steel—resist damage from a wide range of corrosive products. Maintenance is kept to the absolute minimum because of the unusual simplicity in construction of NIAGARA METERS.

If you process or use liquids of a corrosive nature, will be to your advantage to investigate NIAGARA.

Send in the Data Request blank below . . . today.

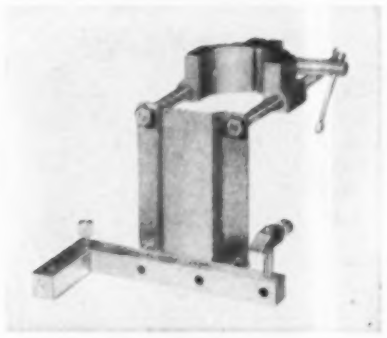
BUFFALO METER CO.
2893 MAIN STREET
BUFFALO, N.Y.

Gentlemen:
Please send me complete information on the use of economical NIAGARA METERS, based on the data below:
Liquid _____ Pressure _____ p.s.i.
Temp. _____ °F.
Flow rate _____ g.p.m.
Maximum batch _____ gals.
Name _____
Company _____
Address _____

If you write maker identify as IEN - 10068

DRILLING . . Adjustable guide positions work under a machine spindle

Source: WALKER-TURNER DIVISION
637 South Ave., Plainfield, N. J.



About $15 to $19

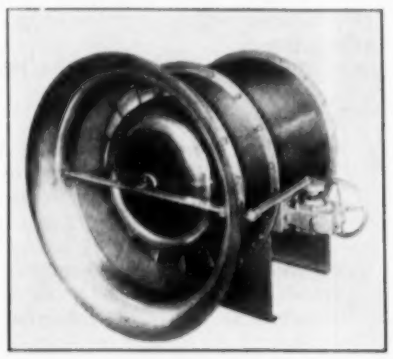
A clamp at the rear of this new Safety Guide applies on a 2¾ or 3¾-in. drilling machine column so the angle type work guide rides just above the table top. This member and its upright connection plate ride in the clamping member on a pair of adjustable horizontal rods so the guide can be set in various positions on the machine table. A clamp finger is mounted on the angle member.

The guide eliminates need for C-clamps and other types of fastening devices to hold work safely under a drilling machine spindle. A locking screw with a knurled head holds a set position on the table. The assembly is available in a number of types for bench and floor drilling machines with a 2¾-in. column, for a floor model machine with 3¾-in. column, for 15-in. single and multiple spindle production drilling machines with 2¾-in. columns and for 20-in. single and multiple spindle production machines with 3¾-in. columns.

If you write maker identify as IEN - 10069

VENTILATING . . Axial fan equipped with adjustable pitch blades

Source: JOY MFG. COMPANY
253 Henry W. Oliver Bldg., Pittsburgh 22, Pa.



To your order

Hand wheel adjustment, that mounts on the outside of the housing, is now available for the company's line of Axivane industrial fans. The line includes 136 sizes with rating to 200,000 cfm. for pressure to 11-in. of water. In addition to the hand adjustment the company is prepared to supply equipment for automatic control to respond to variations in temperature and humidity. Permanent stops prevent blades being set at overload position.

If you write maker identify as IEN - 10070

Copper Purifier is a concentrated solution of salt for use in cyanide copper plating solutions. It precipitates carbonates, chromates, sulphates. The precipitates can be filtered out or the solution decanted off. There is no need to dump the bath. Sel-Rex Precious Metals Inc., 227-31 Main St., Belleville 9, N. J., is the manufacturer.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10071

EVERYTHING IN AIR CONDITIONING
U.S. AIRCO

Gas Fired Unit Heater

55,000 to 500,000 B.T.U.

Write Dept. IE 953

FOR USE WITH
→ NATURAL,
→ MANUFACTURED,
→ MIXED,
→ LPG AND LP GAS AIR MIXTURES

U.S. AIRCO
UNITED STATES AIR CONDITIONING CORP.
MINNEAPOLIS 14, MINNESOTA

If you write maker identify as IEN - 10072

preferred for ease and speed in 2½" to 4" pipe work

TOLEDO No. 2BR PIPE THREADER

Put this popular Toledo on your 2½" to 4" pipe . . . produce perfect tapered threads with *top-speed* . . . and a *minimum of effort.*

EFFICIENT HAND OPERATION . . . Light weight . . . easy handling . . . convenient carrying handles. Employs Toledo receding die principle . . . 5 die segments . . . highest quality tool steel.

HIGH SPEED . . . Operated with a Toledo Power Drive, the 2BR threads 4" pipe in less than 2 minutes!

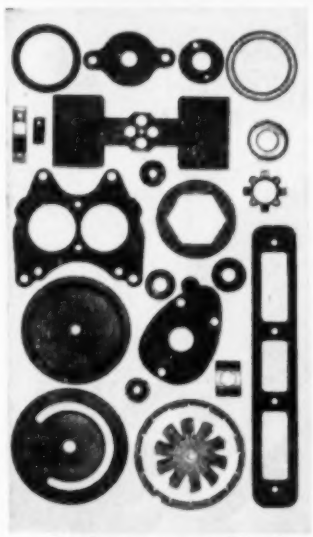
ORDER THROUGH YOUR SUPPLY HOUSE . . . Write for catalog. The Toledo Pipe Threading Machine Co., Toledo Ohio.

RELY ON THE LEADER **TOLEDO**

PIPE TOOLS . . . POWER PIPE MACHINES . . . POWER DRIVES

If you write maker identify as IEN - 10073

YOU SPECIFY... AUBURN WILL SATISFY!



- Gaskets
- Packings
- Washers
- Spacers, Seals Shims, Bushings

Auburn is at your service—80 years of engineering "know-how" in designing, fabricating and developing for every purpose . . . and in virtually any material, including:
Leather • Asbestos • Cork • Rubber • Cardboard • Silicon Rubber • Neoprene • Brass • Aluminum • Felt • Phenolics • Compositions • Cloth • Fibre • Paper • Plastics • Steel • Copper • Teflon • Special Materials.

Send us your specifications or blueprints. You'll receive quotations, recommendations . . . with no obligation.

GASKETS ALGCO PACKINGS

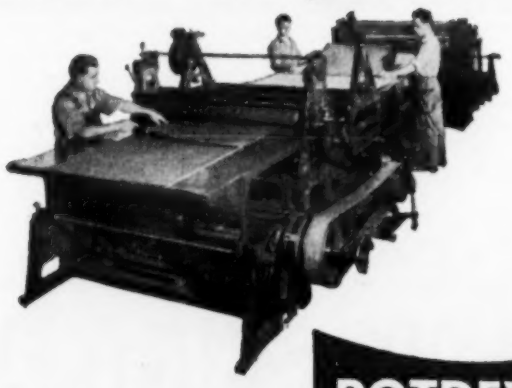
AUBURN MFG. COMPANY
302 Stack St., Middletown, Conn.

Specialists in Gaskets and Packings for More than 80 Years
Representatives: Atlanta, Ga.; Detroit Mich.; St. Louis, Mo.; Los Angeles, Cal.; Minneapolis, Minn.; Washington, D. C.; Cincinnati, O.

If you write maker identify as IEN - 10074

POTDEVIN
50" wide conveyor
GLUING MACHINE and COMBINING PRESS

60 years of dependable service



Handles webs or sheets. Thermostat control for hot glues. Patented dial control regulates coating of adhesive. Single adjustment for overall pressure of combining rollers.

Consult our engineers on any coating problem. Literature on request.

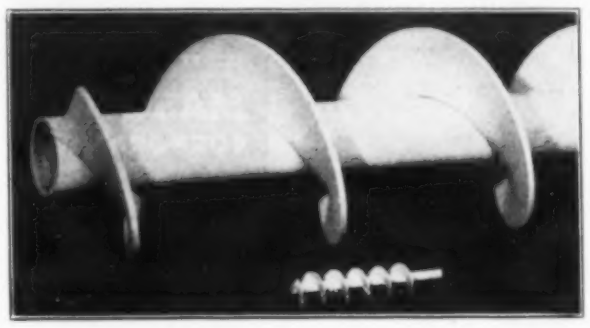
POTDEVIN MACHINE CO.
213 North Street
Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

If you write maker identify as IEN - 10075

BOTTLES TO BOXCARS

The large worm shown below is used for unloading boxcars while the small worm is used for filling bottles. An illustration of the sizes and designs available.



Helicoid and Ribbon,

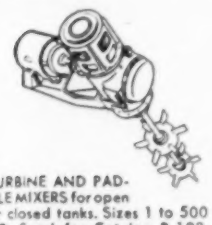
WORMS AND SPIRALS

JAMES EAGEN & SONS
WEST WYOMING, PA.

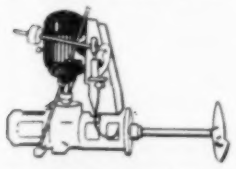
If you write maker identify as IEN - 10076

Mix fluids in a few seconds

FOR PERMANENT MOUNTING ... Top entering propeller mixers for open tanks, closed pressure vessels. Sizes ¼ to 3 HP. Send for Catalog B-103.



TURBINE AND PADDLE MIXERS for open or closed tanks. Sizes 1 to 500 HP. Send for Catalog B-102.



SIDE ENTERING PROPELLER MIXERS. Sizes 1 to 25 HP. Send for Catalog B-104.

Costs less than hand stirring. Mix fluids rapidly, thoroughly—with a LIGHTNIN Portable Mixer. It clamps on any open tank or container . . . handles any fluids.

Do hundreds of mixing jobs at low cost.

- Mix paint, glaze, chemicals
- Dissolve powders and crystals
- Circulate solvent for cleaning small parts
- Agitate quench baths
- Blend food products

Fully guaranteed to mix quickly and completely. Thousands in use everywhere. Many in service over 20 years.

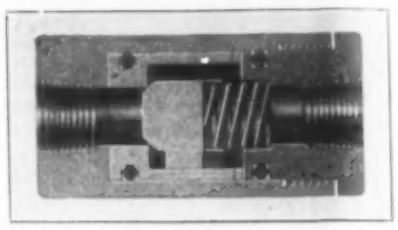
Thirty models to choose from —⅛ to 3 HP. Electric and air motor types. *Send today for Catalog B-75 and prices.*

MIXING EQUIPMENT Co., Inc.
124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1, Ont.
MIXCO fluid mixing specialists

If you write maker identify as IEN - 10078

VALVE . . Hydraulic check design, specified size, pressure to 5,000 lb.

Source: ANCO INC.
3 Baker St., Providence 5, R. I.



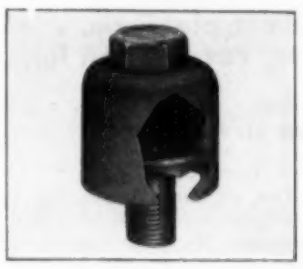
For oil, water, air

Hardened steel seat sleeve and sliding piston are enclosed in the cylindrical aluminum or steel body of this new hydraulic check valve. Seat and piston are ground and lapped together. The piston is spring backed in the threaded plug that holds the assembly at one end of the body. Initial opening pressure is not more than 5 lb. in any maximum pressure rating, to the 5,000-lb. standard or the 10,000 lb. that is subject to specification. Internal passage through the valve exceeds the specified pipe size.

If you write maker identify as IEN - 10079

VENTILATING . . Breather cap for crankcases, gear boxes, fuel tanks

Source: CRENLO INCORPORATED
1427-31 Third Ave. N. W., Rochester, Minn.



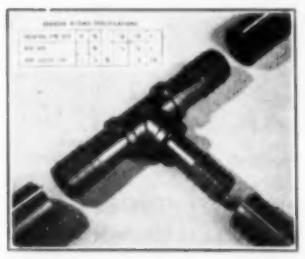
Specified materials

Sizes range from ⅛ to 2-in. pipe in this new breather cap. It threads into place to position its spring-filled cap over the breather opening. The springs capture dust so it cannot enter the protected enclosure. Resistance to free air flow is negligible.

If you write maker identify as IEN - 10080

PIPE . . Plastic reducing tee with side outlet one size below run

Source: CARLON PRODUCTS CORP.
10225 Meech Ave., Cleveland 5, Ohio



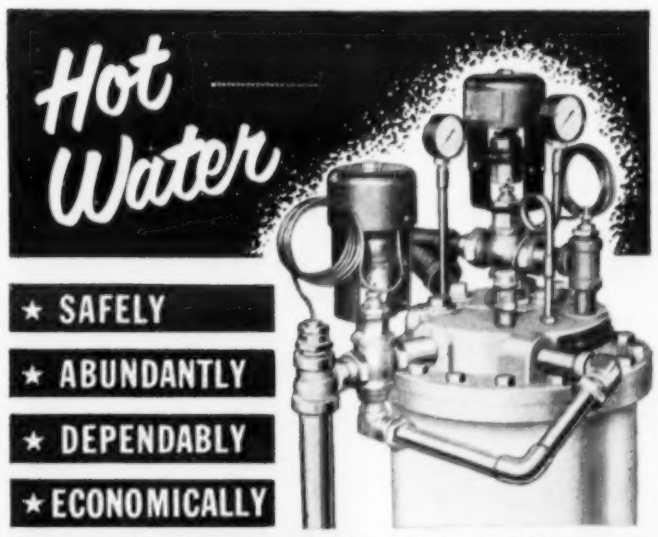
Thermoplastic

Step-down laterals for water and sprinkler lines can be installed in a plastic pipe line with this new reducer insert tee. It is available in ¾ to 2-in. pipe size with the side outlet ranging from ½ to 1½ inches. The fitting inserts in sections of pipe that have been cut to length.

Stainless steel clamps are tightened over the pipe to draw it down over the insert serrations for a leak proof connection. Material is not subject to rot or electrolytic corrosion.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10081



This compact, modern "package" heater will furnish heated water abundantly and economically with exceptional uniformity of temperature.

It is delivered completely assembled, adjusted, tested and ready to install by merely attaching water and steam pipes.

Water for washrooms and showers is delivered at the uniform, safe, regulated temperature of 120° F.

Or, water for scalding purposes can be drawn directly from the tank simultaneously at 160° to 180° F.

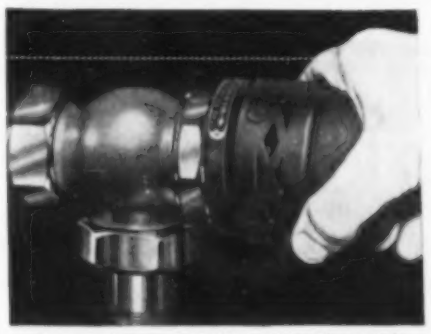
Hundreds are in use and highly satisfactory performance has brought many repeat orders.

For better hot water service than you have yet experienced, write for our illustrated bulletin.

THE COE SAFETY WATER HEATER
THE COE MANUFACTURING COMPANY
504 BANK ST. PAINESVILLE, OHIO

If you write maker identify as IEN - 10082

Low cost room comfort ...with



Sylphon Automatic Radiator Valve No. 885, for exposed radiators. (No. 895, not shown, for enclosed radiators.)

SYLPHON Automatic Radiator Valves

● Here's the money-saving answer to the problem of too much or too little heat. Sylphon Automatic Radiator Valves assure positive, uniform temperature control in one room, an office or entire plant. Easily installed on your present radiators. Simply constructed, self-powered, self-contained, fully modulating. Pay for themselves many times over in fuel savings. Write for Bulletin RN-80.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

If you write maker identify as IEN - 10083

THE PROBLEM

How to weigh large castings conveniently and accurately.

This 35 ton steel casting was easily weighed by placing three Baldwin SR-4 Load Cells under it.

THE BALDWIN SOLUTION

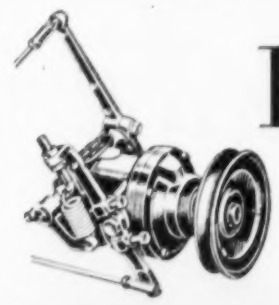
Baldwin SR-4 devices enabled a large Eastern foundry to weigh faster and more accurately this huge semi-rotor, built for a Canadian hydro-electric plant. Three 50,000 lb. SR-4 Type C Load Cells were used. Output of each cell ran to an SR-4 manual null-balance indicator. Here each cell was read separately and totalled; other cases might better use an SR-4 weighing system electrically adding cell outputs.

Baldwin SR-4 devices have *uses unlimited* in industry . . . measuring load, pressure or torque economically, speedily and accurately. For latest technical information write to Dept. 3113, Baldwin-Lima-Hamilton Corporation, Philadelphia 42, Pa.

TESTING HEADQUARTERS

BALDWIN-LIMA-HAMILTON
General Offices: Philadelphia 42, Pa. • Offices in Principal Cities

If you write maker identify as IEN - 10084



now

ONE GOVERNOR ONE MODEL . . .

for 9 out of 10 industrial and farm engines

PIERCE
LONG RANGE UNIVERSAL GOVERNOR

● Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.

● Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

List Price $39.50 Pulley extra

Write for Complete Information

DEALERSHIPS AVAILABLE

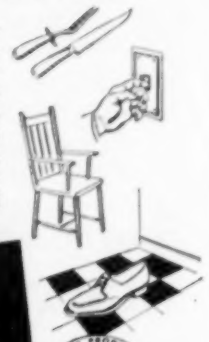
THE PIERCE GOVERNOR COMPANY, INC.
1636 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as IEN - 10085

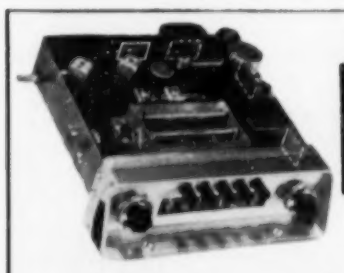
Start by specifying Jewel Brand Coated Abrasives.

Whatever your finishing operation may involve — grinding, smoothing or polishing — there's a specific Jewel Brand Abrasive Belt designed and made to help you do the job better, faster, and at a lower cost. Let an experienced Jewel Brand Engineer help you select the *right* one — for metal, wood, leather, rubber or plastic. Write for complete details. Abrasive Products, Inc., 541 Pearl St., South Braintree 85, Mass.



Jewel Brand COATED Abrasives

If you write maker identify as IEN - 10086



NATIONAL VULCANIZED FIBRE

contributes to an improved product—copper-clad Peerless Capacitors for Bendix Radios

Used by Bendix Radio Division on voice coil circuit and power input leads of automobile radios, capacitors are Peerless Insulation .004 inch thick clad on both sides with .00135 inch copper foil. Minimum capacitance, 200 mmf. Selling for about 7/10 of one cent, capacitors replace types costing five to six. This is typical of the countless contributions National Vulcanized Fibre makes in the production of improved, more economical products.

National Laminated Plastics nationally known—nationally accepted

NATIONAL VULCANIZED FIBRE — A tough, horn-like material with high dielectric strength. Excellent machinability. Sheets, Rods, Tubes, Special Shapes.

PHENOLITE Laminated PLASTIC — Good electrical insulating material with great mechanical strength; moisture resistant. Sheets, Rods, Tubes, Special Shapes.

NATIONAL VULCANIZED FIBRE CO.
Wilmington, Delaware — Offices in Principal Cities
Since 1873

If you write maker identify as IEN - 10087

ECONOMIZE *Morton-WISE*

SPECIFY AND USE **Morton**

STANDARD FIXTURE CLAMPS AND COMPONENTS . . . . . .

A SAVING OF $62.35 ACHIEVED ON THIS JOB

3 REST BUTTONS COST a leading manufacturer $67.00 to make in his own plant. Now, MORTON-WISE, he buys MORTON RB-3 for $1.55 each.

Greater Savings

Achieved on Jig Feet, Rest Pads and other MORTON Standards. Largest selection of types and sizes of Fixture Clamps and Fixture Details in the Industry. Complete Assemblies or Individual Parts. Highest quality of workmanship and materials maintained. Immediate delivery.

★ *STANDARDS* can easily be modified to suit your special application.

Write for: Instructive, Illustrative Catalog. Contains full size tracing templates of each product.

MORTON MACHINE WORKS
2421 WOLCOTT ST. • DETROIT 20, MICH.

If you write maker identify as IEN - 10088

PUMP . . Eccentric rotary design for corrosive fluids, 20 gpm., 60 lb.

Source: VANTON PUMP CORP.
7308 Empire State Bldg., New York 1, N. Y.

No packing glands

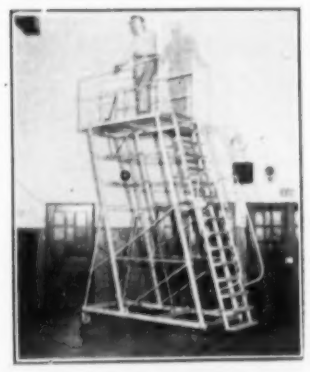
The body block of the eccentric rotary pump, previously described IEN-7035-52, is now available in Buna-N hard rubber to operate satisfactorily at temperatures to 225 deg. F. The block also is resistant to attack by acids, caustics, organic solvents. The new design is known as Series PXHR. Pumps in the line are available with ratings from ⅓ to 20 gpm. for pressure to 60 pounds. Each unit is self-priming and provides suction lift to 24 in. Hg.

Fluid passing through the pump is trapped between the outer surface of the Flex-I-Liner and the inner surface of the body block where it is "squeezed" through the pump. Molded flanges on the Flex-I-Liner straddle the body block and are pressed to its sides by end plates to seal the fluid passage from contact with the moving parts. The liner rides on an eccentric rotor mounted on the drive shaft.

If you write maker identify as IEN - 10089

SCAFFOLD . . Portable lift platform, hydraulic operation, rates 1 ton load

Source: SCAFFOLD EQUIPMENT CO.
P. O. Box 8786, Pittsburgh 21, Pa.



For safe work overhead

The platform at the top of this new hydraulic lift unit measures 3 by 6 feet. It is equipped with a guard rail and a hand operated hydraulic pump with which the upper section is telescoped up or down with reference to the lower section. Three sizes in the line provide work heights from 3½ to 6½ ft., from 7 to 12 ft. and from 12½ to 17½ feet. Base dimensions are 38 by 72 in. to 69 by 96 inches. List price is $320 to $470.

Construction is in welded steel employing carbon steel tube. Eight sub-assemblies can be erected or knocked down in about 15 minutes. Lift movement is about 2 fpm. Base mounting is on 5 or 8-in. rubber tired brake lock swivel casters. One side carries a ladder for access to the platform.

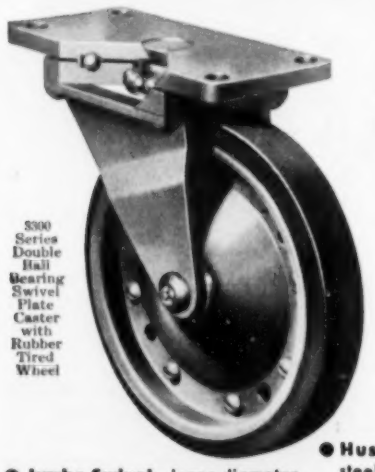
If you write maker identify as IEN - 10090

Light scratches are removed from glass, while the glass is in place, by a new portable electric tool. It mounts and rotates a 3-in. felt pad. The latter is moistened with water, dipped into a slurry containing cerium oxide and then pressed flat against the glass in the region of the scratch. It is moved back and forth until the scratch disappears. Manufacturer is Glass Center Enterprises Inc., 126-30 Summit St., Toledo 4, Ohio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10091

NOELTING **Faultless** ENGINEERED **TRUCK CASTERS** CUT HANDLING COSTS



3300 Series Double Ball Bearing Swivel Plate Caster with Rubber Tired Wheel

NEW!
MAN-SAVER AND EXPEDITER for INDUSTRY

Here's the answer to your need for *extra* mobility . . . *extra* load capacity . . . *extra* output from less manpower. It's the ideal caster for quickly and quietly moving trucks or other mobile equipment and there's a clear profit from the *extra* mileage they give. Ask your supplier for Series 3300.

- **Jumbo Swivel**—large diameter ball races. Two full rows of balls rolling around hardened raceways formed in heavy steel plates.
- **Husky Horn**—heavy gauge steel sides and top plate riveted into single unit of surplus strength.
- **Oversize King-Pin**—machined to precision fit.

FAULTLESS CASTER CORPORATION
Dept. IE, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as IEN - 10092

New production economies with these strong, grainless hardboard panels, offering faithful reproductions of popular woods, rare woods, beautiful marble patterns. Save on material costs...save on processing costs. Easy-to-work, all-wood panels are 4′ wide, up to 8′ long. Get the facts! Write today!

BETTER HARDBOARDS FOR BETTER PRODUCTS

MASONITE® CORPORATION Dept. IEN-9, Box 777, Chicago 90, Illinois

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 10093

Tape it with Behr-cat®

Super strong, filament-reinforced, pressure-sensitive BEHR-CAT Strapping Tape is the modern way to wrap and pack just about anything—boxes, tubing, lumber, plate glass, metal parts, etc. It goes on in a jiffy — sticks at a touch — no special tools required. Comes off just as easily too—a strong point with your customers. You can speed up packing and shipping operations all along the line with BEHR-CAT Strapping Tape.

TRY A SAMPLE ROLL

Put BEHR-CAT Strapping Tape to the test. Write Behr-Manning Corp., Troy, N. Y., Dept. IEN-9.

For Export: *Norton Behr-Manning Overseas Inc., New Rochelle, N. Y., U. S. A.*

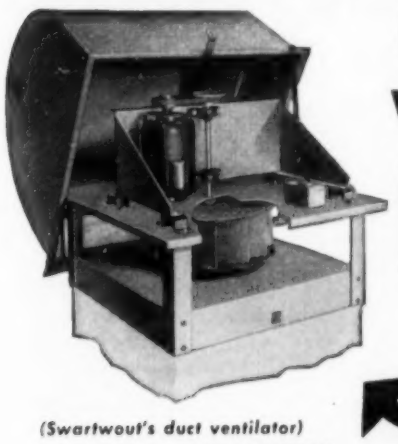
In Canada: *Behr-Manning (Canada) Ltd., Brantford.*

BEHR-MANNING *division of NORTON Company*

▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN - 10095

If you write maker identify as IEN - 10096



Give your ventilation a quiet lift with Airlift

(Swartwout's duct ventilator)

FEATURES:

- Certified ratings
- Non-overloading fan wheel
- Lower fan tip speed
- Oversize outlet opening
- Lowest noise levels

Centrifugal type fan in Swartwout-designed ventilator provides powerful efficient exhaust against static pressure; operates at low noise levels. Write for Bulletin AL-B.

18511 Euclid Avenue, Cleveland 12, Ohio

The Swartwout Co.

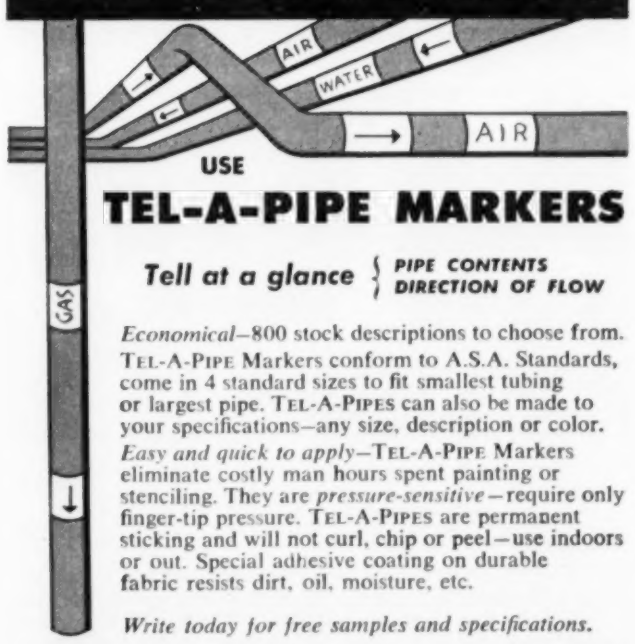
Roof Ventilators and Ventilating Louvers

POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS

If you write maker identify as IEN - 10097

FOR FAST, ECONOMICAL

PIPE IDENTIFICATION



USE

TEL-A-PIPE MARKERS

Tell at a glance { PIPE CONTENTS / DIRECTION OF FLOW

Economical—800 stock descriptions to choose from. TEL-A-PIPE Markers conform to A.S.A. Standards, come in 4 standard sizes to fit smallest tubing or largest pipe. TEL-A-PIPES can also be made to your specifications—any size, description or color.

Easy and quick to apply—TEL-A-PIPE Markers eliminate costly man hours spent painting or stenciling. They are *pressure-sensitive*—require only finger-tip pressure. TEL-A-PIPES are permanent sticking and will not curl, chip or peel—use indoors or out. Special adhesive coating on durable fabric resists dirt, oil, moisture, etc.

Write today for free samples and specifications.

WESTLINE PRODUCTS DIVISION

WESTERN LITHOGRAPH CO.
600 East Second Street, Los Angeles 54, California

If you write maker identify as IEN - 10098

CLEANING . . Steam spray machine delivers hot solvent through steam gun

Source: AEROIL PRODUCTS CO.
67-71 Wesley St., South Hackensack, N. J.

Bulletin 995R

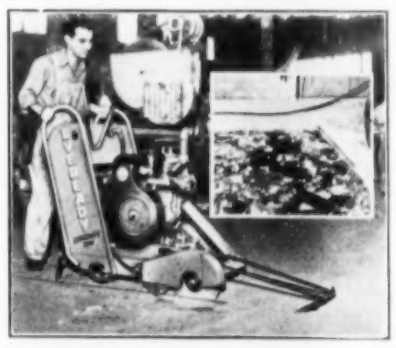
Model 121 is a new portable cleaning machine with an oil fired flash type boiler and a motor driven water pump. The pump picks up water from a shop supply line and delivers through the boiler to produce 100-lb. steam within 90 sec. from a cold start. The steam and cleaning solvent, introduced on the delivery side of the boiler, pass through a 25-ft. hose to the spray gun. Control centers at the gun so the operator need not go back to the machine.

Powdered compound is introduced into a 10-gal. solution tank containing water to make up sufficient cleaning solution for 8 hr. of operation. Steam capacity is equivalent to 120 gph. and fuel oil capacity is 11 gallons. Overall dimensions are 35 by 28 by 39 inches. Weight is about 500 pounds. Current for the pump and ignition is through a 15-ft. extension cord and the pump motor and ignition is through a 15-ft. extension cord and plug for connection to a 110-volt ac. line. Safety devices prevent damage to the operating elements.

If you write maker identify as IEN - 10099

CUTTING . . Engine driven machine operates diamond blade to cut masonry

Source: EVEREADY BRIKSAW CO.
1507-11 S. Michigan Blvd., Dept. 249, Chicago 5, Ill.



Also cuts asphalt

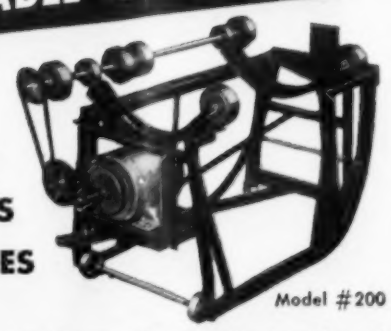
Concrete or other masonry, on a horizontal or inclined surface, can be cut into to remove a strip for a trench or an area for a foundation with this new engine driven machine. The engine drives a diamond disc blade to make a square smooth cut at adjustable depth. A hydraulic control, known as Hydra-Eze, lowers the blade gently to avoid shock contact. A hand operated hydraulic pump lifts the blade from the cut.

The blade is provided with floating action that prevents binding when the machine is operated over broken or uneven surfaces. The blade shaft is designed to take the blade at either end for right or left-hand action in corners and confined locations. A depth control lock limits the depth to the preset amount. A foot operated friction brake holds the machine on inclines. Operating control centers at a panel in front of the operator.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10100

MORSE PORTABLE ROTATOR



- MIXES
- CLEANS
- TUMBLES

Model #200

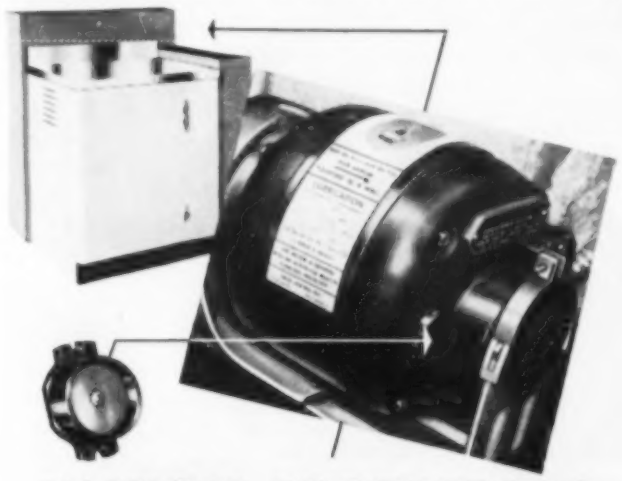
A retractable caster frame offers simpler handling of containers with the Morse Rotator. Two Neoprene Drive Wheels prevent creeping. Four drive wheels give positive driving action and two idler wheels with Torrington Needle Bearings make the Morse Rotator a smoothly operating unit. Tipping lever included with each Rotator. Write for free folder showing complete Morse line.

Complete with motor and drive—Wt. 155 lbs. $275.00

MORSE MANUFACTURING CO. INC.

755 West Manlius St. East Syracuse, N. Y.

If you write maker identify as IEN - 10101



KLIXON PROTECTORS

Help keep the "heat on" in York-Shipley Boiler Units

Modern in design, compact for space saving, the York-Shipley oil-fired, table-top boiler units provide plenty BTU's for outstanding home and hot water heating.

York-Shipley engineers specify and use motors with built-in Klixon Protectors to insure dependable, long-lived motor operation.

Here's what Mr. H. Leroy Mohn, project engineer, has to say about Klixon Protection:

"We prefer Klixon built-in motor protection in our oil burner and circulating pump motors because we find they reliably protect motors against unusual load conditions. Our experience with these protectors has been excellent."

You, too, can keep motors in your equipment operating, reduce service calls and repairs by specifying and using Klixon protected motors. The additional cost is low, pays for itself over and over by reducing motor burnouts.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
209 FOREST STREET, ATTLEBORO, MASS.

KLIXON

If you write maker identify as IEN - 10102

You can inspect long parts at all magnifications . . . with the Kodak Contour Projector

This seven-inch-long cycle timing part must be inspected for tooth contour, location and spacing of two cams, shaft diameter, shoulder spacing, and form, size, and runout of the lead screw. All these dimensions may be quickly checked on the Kodak Contour Projector. That's because the Kodak Contour Projector provides an unvarying 8" clearance between lens and object at all magnifications.

The exceptional versatility of the Kodak Contour Projector permits this part to be completely inspected in six positions, at several different magnifications, and using both surface illumination and silhouette projection. And the job requires little training, is done quickly and easily.

Whether for toolroom use or production assembly and inspection, you'll find a Kodak Contour Projector will get the work out in a hurry. With an appropriate chart-gage and fixture you can inspect all sorts of complex parts, large and small. There is a field representative in your area who will answer your questions. To get in touch with him, or for a copy of a new booklet, "Kodak Contour Projector," write to:

Special Products Sales Division
EASTMAN KODAK COMPANY, Rochester 4, N. Y.

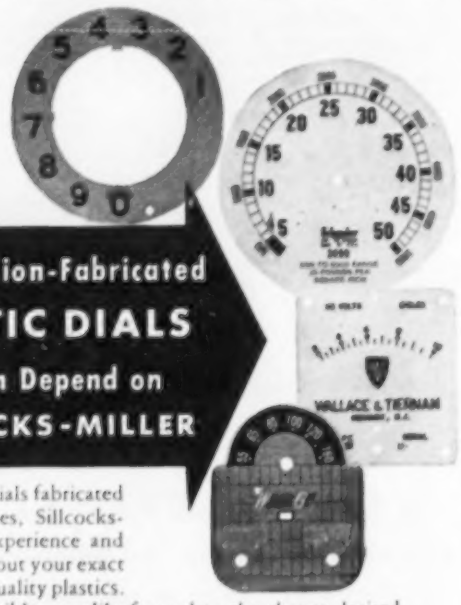
Optical Gaging

the KODAK CONTOUR PROJECTOR

A new sound movie, Optical Gaging, shows how to simplify complex inspection problems. We'll tell you how to get it for a showing.

Kodak
TRADE-MARK

If you write maker identify as **IEN - 10104**



For Precision-Fabricated PLASTIC DIALS You Can Depend on SILLCOCKS-MILLER

When you need dials fabricated to close tolerances, Sillcocks-Miller has the experience and facilities to work out your exact requirements in quality plastics.

Plastics are flexible—readily formed to the shapes desired. They offer unlimited colors. They can be printed or silk screened—and when laminated provide complete protection to the message. Where temperature or weather are factors, there are plastic materials to meet your needs. And they keep their attractive finish and appearance.

Put your dial problems in the hands of these specialists for the most practical answer. Write for details today.

The SILLCOCKS-MILLER Company
Pioneers in Plastic Fabrication since 1910

27 West Parker Avenue • Maplewood, N. J.

If you write maker identify as **IEN - 10105**

ELWELL-PARKER Trucks

Carrying loaded charging bucket, weighing 9620 lbs., to cupola.

Save 80 Man-Hours Daily!

When 2 Elwell-Parkers replaced hand trucks at a prominent southern foundry, they released 10 laborers for other duties. Operations previously hazardous are now done with ease and safety. After 18 months' steady service, carrying 450,000 lbs. per shift, the E-P trucks have required only minor repairs.

87 types of E-P industrial power trucks are serving 300 different industries.

FREE BULLETIN describes notable savings by E-P trucks. Write for copy of "Industrial Logistics", and name your product.

THE ELWELL-PARKER ELECTRIC COMPANY
4064 St. Clair Avenue • Cleveland 3, Ohio

If you write maker identify as **IEN - 10106**

The "Signature" is the finishing touch on your product!

Ever stop to think that your name plate is really the "signature" on your product? Its appearance should reflect your pride; its durability should match the quality of your product. Let us help you create such a "signature." Our skilled craftsmen, long experience and modern equipment insure finest results. Send a rough sketch or blue print for design suggestion and quotation.

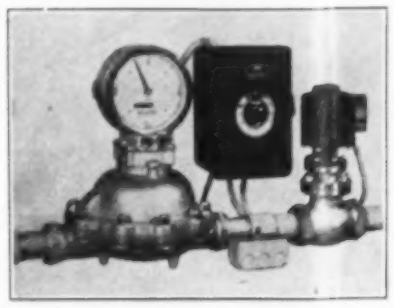
Write now for "Etched or Lithographed Metal Products", with full color examples of name and instruction plates.

CHICAGO THRIFT-ETCHING CORPORATION
1555 N. SHEFFIELD AVE., CHICAGO 22, ILL., DEPT. F
SUBSIDIARY OF DODGE MANUFACTURING CORPORATION, MISHAWAKA, INDIANA

If you write maker identify as **IEN - 10107**

FEEDING . . Meter control assembly delivers predetermined fluid quantity

Source: BUFFALO METER CO.
2893-P Main St., Buffalo 14, N. Y.



Meter actuates counter

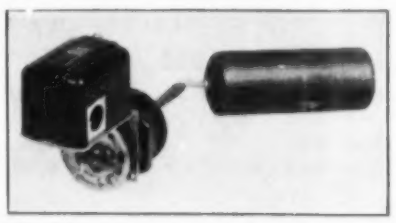
New assembly is illustrated for the company's Electrivolume metering equipment, previously described IEN-8884-50. The equipment will handle hot or cold water-base liquids, viscous and non-viscous oils, corrosive chemicals to deliver any desired predetermined amount.

An electric impulse is generated in a power circuit upon delivery of each unit of the liquid, as in the previous assembly. Impulses are transmitted to a counter which accumulates them up to the predetermined number. The solenoid valve in the liquid line closes at this point and the counter recycles itself to zero ready for the next run. The equipment consists of the meter, the impulse counter, the solenoid valve and a push button unit to start the action.

If you write maker identify as **IEN - 10108**

SWITCH . . Float operated for use in condensate return pump tank

Source: SQUARE D COMPANY
4039-43 N. Richards St., Milwaukee 12, Wis.



For automatic control

Class 9037 Type HG is a new float operated switch to control the pump motor on a condensate return installation. The switch threads into place on the closed return tank. It is designed so float position can be set for right or left hand operation. Float travel can be adjusted, with the switch in place, by loosening two screws and moving the float stops. A position indicator and dial assist in this operation.

The switch operates satisfactorily under 50-lb. pressure. It is two-pole double-break design with silver contacts. It can be specified for operation on 110/220-volt or 440/550-volt ac. The operating mechanism is positive snap acting toggle design. Enclosed parts are made of cadmium plated steel. Immersed parts are brass, copper or stainless steel. A water tight stuffing box has graphite coated asbestos packing.

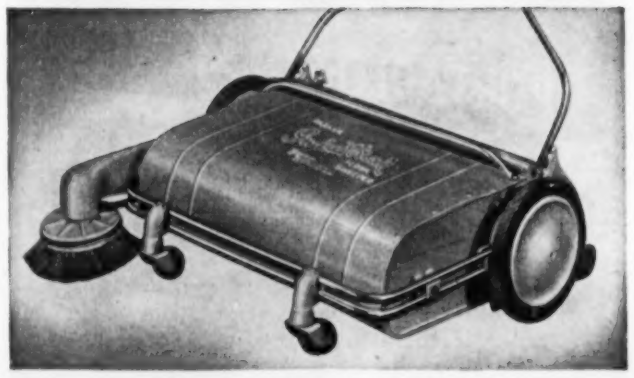
If you write maker identify as **IEN - 10109**

Free sample of purple layout fluid for machinists, tool makers, model makers, sheet metal workers, metal pattern makers, is available on request to Dayton Rogers Mfg. Co., 2822-13th Ave., S. Minneapolis 7, Minn. It is brushed on a metal surface, after the surface has been wiped clean. It dries instantly to present a surface for scriber layout. Write to the company on your own company letterhead.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10110**

MAN SAVER



Sweeps up to 400% faster than costly pushbroom cleaning . . . saves money . . . saves manpower

A Parker Floor Sweeper saved $2100 a year for a food manufacturer — $520 a year for a lumber yard—75% of all sweeping costs for a building material manufacturer. *You, too, can save.*

Sweeps all type floors. Collects and sweeps in one operation. Easy to empty. A money-saver for any plant from small garage to large factory or warehouse.

Now available — information file containing time studies, case histories, and full details. *Write, wire, or telephone today.*

FACT FILE AVAILABLE

PARKER INDUSTRIAL FLOOR SWEEPER

PARKER SWEEPER CO. • 49 Bechtle Avenue, Springfield, Ohio

If you write maker identify as **IEN - 10111**

INET BATTERY CHARGERS

Efficiency . . .
Endurance . . .
Economy . . .

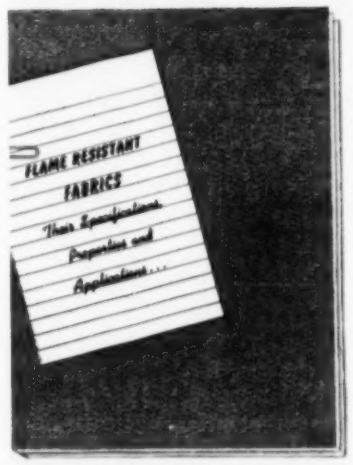
For Years of Endurance plus Long-Term Economy, Specify INET . . . The Regulated Selenium Rectifier Battery Chargers with Magnetic Amplifier Controls that are built to last. D.C. Output for 3 to 60 cells in ratings to 50 KW. Available in panel, floor-standing, or wall-mounted cabinet housings.

Write for complete engineering specifications.

INET INC.
8655 So. Main St., Los Angeles 3, Calif.

If you write maker identify as **IEN - 10112**

FLAMEFOIL CANVAS ...answers the "burning question" - because It can't Blaze*



Direct flame will only char FLAMEFOIL treated fabrics at the point of contact.

Fire cannot spread . . . not even a continuing smoulder to consume the rest of the material after the source of the flame is removed.

The patented FLAMEFOIL process extends the life of the fabric; neither soaking nor exposure will remove its protection against fire, water, weather and mildew.

Tensile strength is preserved and the canvas stays pliable.

SEND TODAY for this booklet . . . learn how Flamefoil canvas can give an extra margin of safety against fire in your plant.

Philadelphia Textile Finishers, Inc.
102 LAFAYETTE STREET
NORRISTOWN, PENNA.

*Manufactured under Patents Nos. 2,044,176 and 2,299,612, others pending.

If you write maker identify as **IEN - 10113**

Another FLASH-O-LENS at work ...checking pigment dispersion at B. F. Goodrich

The inspection tool that *lights* and *magnifies*—FLASH-O-LENS—is in daily use at The B. F. Goodrich Company in making laboratory checks on the dispersion of pigments in milled rubber stocks.

The built-in bulb of a FLASH-O-LENS brightly illuminates the inspection area—the accurately ground lenses give sharp, detailed enlargement. Result: quick, simple inspection!

Battery and plug-in models from $10.65. Write for free literature on applications, types, prices.

E. W. PIKE & COMPANY
492 NORTH AVENUE ELIZABETH 3, N. J.

If you write maker identify as **IEN - 10114**

SHAWMUT'S NEW FORM 208 Amp-trap®

SAVES BOTH CIRCUIT AND CUSTOMER
(FOR 120/208 VOLT AC OR 125/250 VOLT DC NETWORKS)

POSITIVE PROTECTION AGAINST SUPERCURRENTS

Low voltage AC and DC networks give large utilities and their customers greater continuity of service and easy expansion of their systems. The only drawback to this type of network is the constant threat of danger from heavy short-circuit or fault currents. Shawmut's new FORM 208 Amp-trap eliminates this danger from these circuits. It prevents the destructive build-up of heavy fault currents so dangerous to office buildings, stores, hospitals, theatres, schools, etc.

USES & SPECIFICATIONS

Amp-trap FORM 208 is made for Entrance Switch Service, Underground Network Conductors, Distribution & Panelboards and other applications. It is built in Ampere ratings of 1000, 1200, 1600, 2000, 2500, 3000, 4000 and 5000 for Entrance Switch Service and for cable sizes from 4/0 to 1000 MCM. The watt (power) loss is probably lower than for *any other over-current protective device*. Hence it may safely be installed in vaults and steel enclosures and subjected to long continued loads.

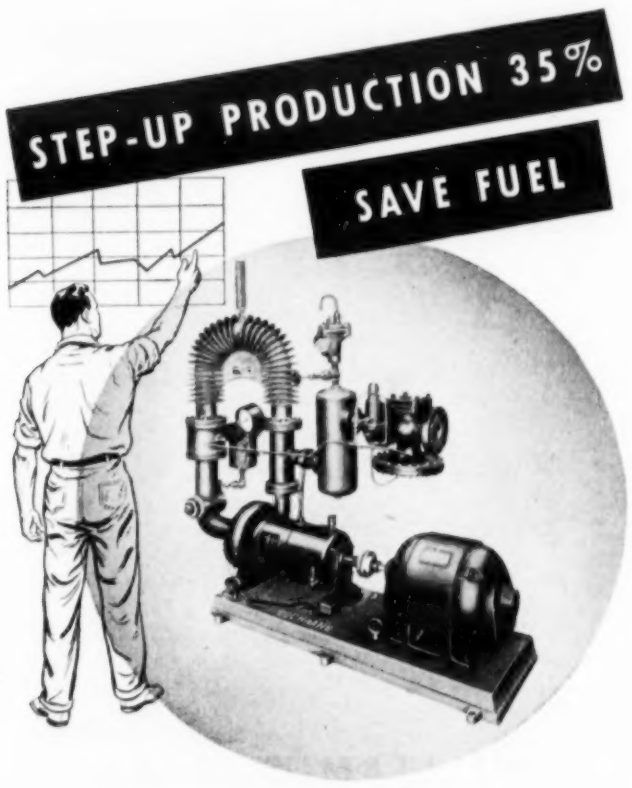
LOW IN COST—EASY TO INSTALL

FORM 208 Amp-traps clear fault currents long before they can burn or wreck bus bars and switch gear. Yet they are small in size, low in cost and easy to apply. Write today and find out about FORM 208.

208 AMP-TRAP — *"Awake At The Switch"*

THE CHASE-SHAWMUT CO.
386 MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS
Est. 1893

If you write maker identify as **IEN - 10115**



cochrane
C-B
CONDENSATE DRAINAGE CONTROL SYSTEM

Over 1700 installations in plants of blue-chip companies processing with steam prove it will do the job better. (Names and case histories on request.)

Faster Heat—quick, thorough removal of air and condensate

Higher Temperature—faster, more intense heat transfer

Uniform Heating—fluctuations leveled-out, cold spots eliminated, product quality improved

Lower Maintenance—corrosive gases and entrained air automatically removed from returned condensate.

The Cochrane "JET" Unit removes "insulating" layers of condensate continuously and efficiently from all types of steam processing equipment . . . shortens cooking and drying cycles . . . provides more intense latent heat transfer, resulting in production increases up to 35%.

And by returning condensate to the boiler without appreciable pressure or temperature drop, savings in fuel costs of 1% for every 11° rise in water temperature are achieved . . . in some cases as high as 20%. Make-up water cost and requirements decline sharply. No water lost through flashing.

Consult us on condensate drainage and recovery problems—The C-B (condensate booster) can be the answer that will increase the over-all efficiency of your operations—Write today for Pub. 3250 containing detailed information. Let us prove to you that the "JET" principle *does produce results.*

cochrane
corporation

3152 N. 17th Street, Philadelphia 32, Pa.
offices in 29 principal cities

If you write maker identify as **IEN - 10117**

STORING . . Steel cabinet combines wardrobe and storage shelves

Source: ROYAL METAL MFG. CO.
173-77 N. Michigan Ave., Chicago 1, Ill.

Ten styles

One shelf measuring full width, five 18 by 18-in. shelves and a wardrobe space are combined in this new 36 by 18 by 78-in. steel cabinet. It is one of several 78-in. and counter high cabinets in 18 and 24-in. depths. Each is shipped knocked down for assembly on the job. The doors and front frame are a one-piece unit.

Construction includes rounded corners and edges, concealed hinges with blind attachments to prevent tampering. Finish is in grey or green baked enamel. Interiors are ventilated through louvers. The shelves are adjustable vertically on 2-in. centers.

If you write maker identify as **IEN - 10118**

SOLDERING . . Rosin flux to dip tin printed electric circuits

Source: LONDON CHEMICAL CO.
323-27 W. 32nd St., Dept. I-5, Chicago 16, Ill.

Contains no free acid

New flux is characterized by its ability to insulate, bond and provide fast fluxing action and smooth even coating required in the dip tinning of printed circuits. Insulating ability is comparable to polyethylene plastic. It protects against corrosion in soldering delicate electronic components. The flux will not harden, crystallize or precipitate, following prolonged storage or exposure to air.

If you write maker identify as **IEN - 10119**

VALVE . . Pressure relief unit to protect hot water space heaters

Source: McDONNELL & MILLER INC.
3502 N. Spaulding Ave., Chicago 18, Ill.

Four screws hold assembly

Two new sizes, 1 and 1½ in., have been added to the original ¾-in. No. 230 pressure relief valve. The new units are suited for hot water space heating boilers that rate to 743,000 and 1,025,100 btu. per hr. respectively. They comply with the ASME Boiler Code. They have been tested and ratings certified by the National Board of Boiler and Pressure Vessel Inspectors.

Construction includes brass in the valve seat, silicone in the disc, non-corrosive materials in all of the other operating parts. Pressure settings, made at the factory, are tamper proof. The test lever cannot interfere with operation.

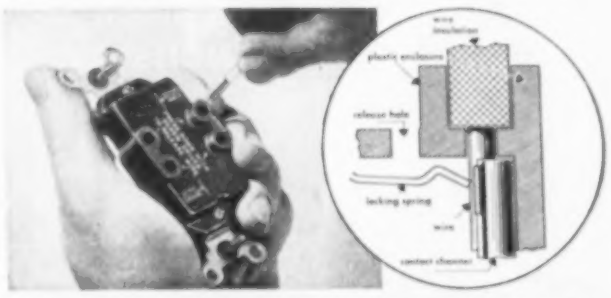
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10120**

COMPLETE LITERATURE ON REQUEST
THE CLEVELAND VIBRATOR CO.
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 10121**

NOW...just push in the wires



New G-E "PRESSURE-LOCK" terminals connect wiring devices automatically—without binding screws

You can now make electrical connections by simply pushing straight, stripped wires into these new "pressure-lock" terminals. The spring lock holds the wire securely against a contact channel. Instantly released when desired. There are no binding screws . . . no looping, hooking, or crimping operations.

These terminals are featured in the new GE3800-line of outlets, switches, and lampholders. Listed by Underwriters' Laboratories, Inc.

Write for illustrated folder. Section D105-942, Construction Materials Division, General Electric Co., Bridgeport 2, Connecticut.

1878 75 1953 YEARS OF ELECTRICAL PROGRESS

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as **IEN - 10122**

If you write maker identify as **IEN - 10123**

LIFTS UP TO 25 TONS

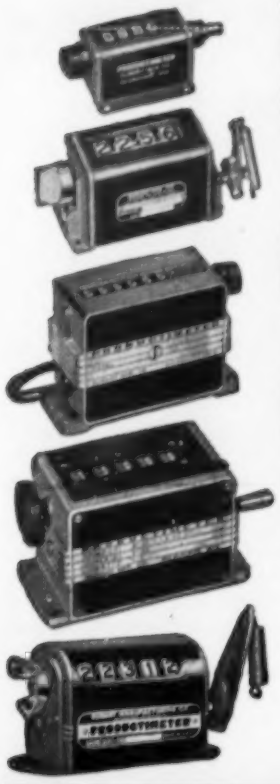
Behind the 25-ton lift capacity of this Koehring 304 Truck Crane are many important features that give you big-tonnage output. On the intermittent usage of clamshell or crane work, there's no time-out for adjusting clutches. Heat-compensator spring automatically makes all tension changes, maintains full clutch efficiency at all times. Koehring booster clutch cuts normal lever pull 50%, retains accurate "feel" of load. Also check: max. 110-ft. boom length with jib, power boom lowering, 35 mph mobility. Other sizes: up to 79½ tons lift capacity.

KOEHRING COMPANY
Milwaukee 16, Wis.

Write for bulletin

KOEHRING *Truck Cranes*

If you write maker identify as IEN - 10124



COUNTING the pulse of INDUSTRY

Productimeters register accurate count of every unit processed . . . eliminate profit-eating losses . . . insure economical plant operation and maximum use of man-hours. There's a size and style to suit every need.

Send for Catalog No. 101

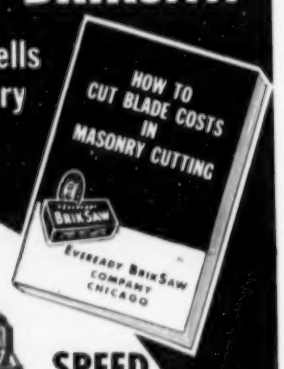
DURANT MANUFACTURING CO.
1930 N. Buffum Street
Milwaukee 1, Wis.
130 Orange Street
Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS SINCE 1879 *Count Everything*

If you write maker identify as IEN - 10125

Get More Heats Per Lining with EVEREADY BRIKSAW

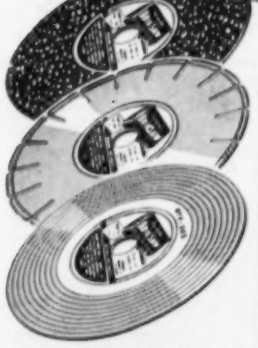
This FREE BOOK Tells How to Cut Any Masonry Material in SECONDS!



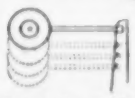
WET *(DUSTLESS)* OR DRY CUTTING

SPEED REPAIR WORK

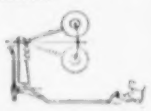
Get that FURNACE—KILN—OR BOILER back in operation fast! Cut **any** Fire Brick in **seconds** with a BRIKSAW . . . and "BRIKSAW CUT" Reline Jobs **last longer** — give more heats.



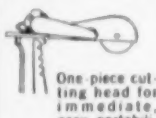
EXCLUSIVE EVEREADY BRIKSAW FEATURES



"Adjusta-Height" lets cutting head change elevation for materials of varying thickness . . . adjusts in 4 seconds.



Swing the cutting head to any desired position with this "Toe-Matic" foot treadle. Fast shift from one type of masonry material to another.



One-piece cutting head for immediate, easy portability. Off the saw frame in 21 seconds flat!

Automatic pressure control for the blade. Adjusts cutting pressure to hardness or softness of material.

EVEREADY
- ABRASIVE
- DIAMOND
- "TUFFIE"

BLADES

Your local Distributor carries EVEREADY Blades to best cut any masonry or fire brick material . . . for every make and model Masonry Saw. Order your EVEREADY Blades from local stocks.

CUT Special Shapes—
SKEWS—SPLITS—ANGLES
from Standard Shapes

Any shape, any size . . . **cut in SECONDS** from Standard Refractory stocks or from cuts you formerly discarded. Cut to precision sizes . . . do a better, faster job of relining. **Save** Material . . . **Save** Time . . . **Save** Money!

WRITE FOR NAME OF NEAREST DEALER

There's an **EVEREADY** DISTRIBUTOR IN YOUR LOCALITY Write for His Name Now!

EVEREADY BRIKSAW COMPANY
1509A S. Michigan Blvd., Chicago 5, Ill.

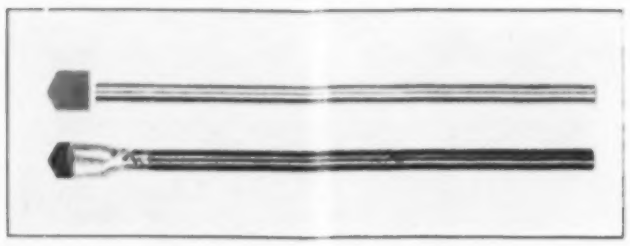
Send without obligation of any kind FREE Booklet on "HOW TO CUT BLADE COSTS IN MASONRY CUTTING"

NAME_____
ADDRESS_____
CITY_____ STATE_____
No. EI-13

If you write maker identify as IEN - 10127

DRILLING . . Carbide tipped tool mounts bit on end of drill rod shank

Source: HAYDEN TWIST DRILL CO.
8624-28 Lyndon Ave., Detroit 21, Mich.



Sizes from 13/64 to 11/16 inch

Fluteless designates a new drill consisting of a drill rod shank and a carbide tip brazed in place. The drill rod is between 50 and 60 per cent of the diameter of the tip. There are no flutes on the shank. The drill is particularly suited for use in plastics. It also will drill shallow holes into cast iron with feed of about 0.003 in. per revolution. Holes, beyond 1½ or 2 diameters in depth, should be drilled horizontally to clear the chips. Steel cannot be drilled.

If you write maker identify as IEN - 10128

HEATING . . Electric oven for use in general laboratory work

Source: BLUE M ELECTRIC CO.
304-10 W. 69th St., Chicago 21, Ill.

Modern design

Range for operation of this new oven is 100 to 550 deg. F., temperature control is within ½ degree. The oven is available to operate on 110 or 220 volts. It is built in three sizes measuring 8, 12 and 19 in. in chamber width, 8, 12 and 18 in. in depth, 8, 12 and 15 in. in height.

Construction includes a one-piece etched wiring panel, double banked heating element assembly, power selector switch for temperature balance, glass-fiber insulation measuring 3½ in. in thickness, chromium plated hardware. The housing can be supplied with a stainless steel interior or with stainless steel inside and out.

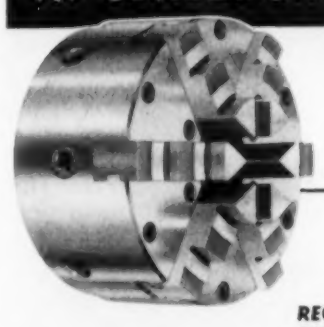
If you write maker identify as IEN - 10129

Leytool trade names new hack saw frame of unusual design. It consists of a tube and internal compression spring with a guide head that is secured in place on the outer end of the tube. A sliding handle, backed by the spring, is on the opposite end. A 10 or 12-in. hack saw blade is secured at one end to the handle. It is backed up by the tube, through most of its length, and is guided by balls on each side in the head at the outer end. A cut is started with the blade stationary with reference to the tube. As soon as the cut is blade deep, a clamp is released, the guide head is butted against the work and the handle is reciprocated to move the blade back and forth. The tool lists at $4.25. Alpha Tool & Supply Co., 553 Alpha St., Closter, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10130

.0005" PRECISION CHUCKING AT SCROLL CHUCK SPEED!



Buck AJUST-TRU CHUCKS

RECHUCK TO .0005" ON DUPLICATE PARTS WITHOUT FURTHER ADJUSTMENT!

The time, labor, and equipment costs you can save with a Buck Ajust-Tru chuck are little short of amazing. It lines up dead true *in less than a minute!* Rechucks duplicate parts *within .0005" at scroll chuck speeds!* Ends most needs for collets, step collets, stub arbors, mandrels, special fixtures. Adapts to lathes, screw machines, dividing heads. *Often doubles, triples output.* Get the *full* story. Send today for latest catalog.

$44.00 TO $250.00
F.O.B. KALAMAZOO

3-Jaw and 6-Jaw Models Available in 4", 5", 6", 7½", and 9" Diameters. 2-Jaw Aviation Chucks Also Available in 6", 7½", and 9" diameters.

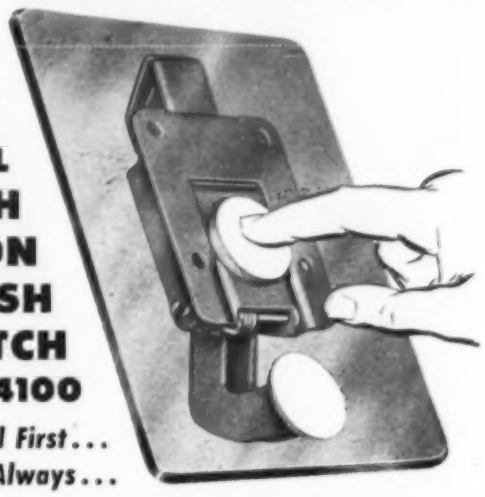
BUCK TOOL COMPANY
916 SCHIPPERS LANE • KALAMAZOO, MICH.

NEW 4-JAW INDEPENDENT CHUCK WITH GREAT NEW MACHINING ADVANTAGES!

Most chucks for 9" to 16" lathes are either too light and cheaply made to hold work securely, or too heavy for the lathe and clumsy to handle. Here's the chuck with the **ideal** weight — providing much more "holding power" and eliminating Sq" overhang to improve accuracy, permit heavier cuts. 6", 8", and 10" models available. Send for latest catalog.

If you write maker identify as IEN - 10131

New HARTWELL PUSH BUTTON FLUSH LATCH H-4100



Functional First . . . Attractive Always . . .

HARTWELL sets a new pattern for the future with efficient, economical *push button* latches that are FLUSH—SELF-CLOSING—EASY TO OPERATE—SIMPLE TO INSTALL.

These modern latches are operated by a natural rotation of the hand for push and lift positive action. As the forward button is depressed, the rear button raises, providing a sturdy grip for opening the door.

Ideal for commercial, industrial, automotive, aircraft, marine and railroad applications.

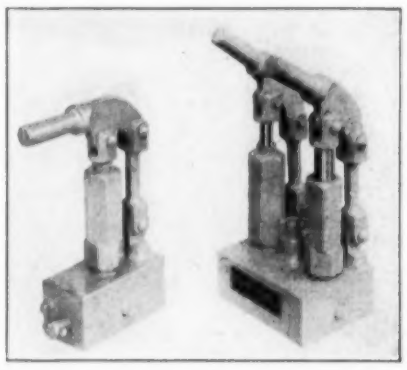
Write for engineering specifications and counsel.

HARTWELL COMPANY
Manufacturers of Flush Latches and Hinges, Fittings and Cable Terminals.
9035 VENICE BOULEVARD, LOS ANGELES 34, CALIFORNIA

If you write maker identify as IEN - 10132

HAND HYDRAULIC PUMP

Single and Double Designs To 20,000 P. S. I.



Interchangeable Pistons ⅜-½-¼ inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 Cu. in.

Pressure range is 3,000 to 20,000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position. We specialize in hand pump units to operate in temperatures from minus 65 F. to 160 F. and with any capacity reservoirs required.

WILLIAM S. PINE
1637 E. 22nd Street, Los Angeles 11, Calif.

If you write maker identify as IEN - 10133

DON'T THROW AWAY YOUR OLD FILES!

Modern plant with facilities developed exclusively for RESHARPENING any make, length, shape and cut AMERICAN PATTERN, SWISS PATTERN and MILLED CURVED TOOTH FILES. Our workmanship is the finest quality and prompt service is guaranteed. Inspect our workmanship for yourself — send us sample files — we will RESHARPEN them free of charge.

Let us resharpen them at ⅓ the cost of a new file. No acid used.

WHARTON FILE CO., Inc.
234 West Central Avenue
WHARTON, N. J.

If you write maker identify as IEN - 10134

TRI-LOK

Each Tri-Lok step consists of a panel of Rectangular, Diagonal, or U-type Tri-Lok flooring in any desired width, length, depth, and bar spacing.

SAFE—checker plate nosing bars make each step stand out clearly. Abrasive edging also available.

CLEAN—clogless, rivetless Tri-Lok joint prevents accumulation of dirt, moisture, rust.

STRONG—added strength provided at maximum load contact by shape and rigidity of nosing bar.

Write today for bulletin PK-1103

DRAVO CORPORATION
National Distributor for the Tri-Lok Company
Dravo Building, Pittsburgh 22, Pennsylvania
Sales Representatives in Principal Cities

If you write maker identify as IEN - 10135

There's an OZALID Machine that matches YOUR needs!

The OZAMATIC. This streamlined, desk-top Ozalid machine makes copies up to 16" wide. With its maximum developing and printing speed of 30 ft. per minute, it can produce up to 1,000 letter-size copies per hour. Economical to buy and to operate.

The Ozalid Streamliner

This moderately priced machine makes copies up to 42" wide at 14 feet per minute. Occupies only 11 sq. ft. of floor space.

The Ozalid Super-B

Air-cooled model with automatic controls. Copies up to 42" wide at rate of 25 ft. per minute. Occupies 18 sq. ft. of floor space.

The Ozalid Printmaster

Accommodates materials up to 42" and 54" wide. Automatic stacking, front and rear delivery. Copying speeds up to 30 ft. per minute.

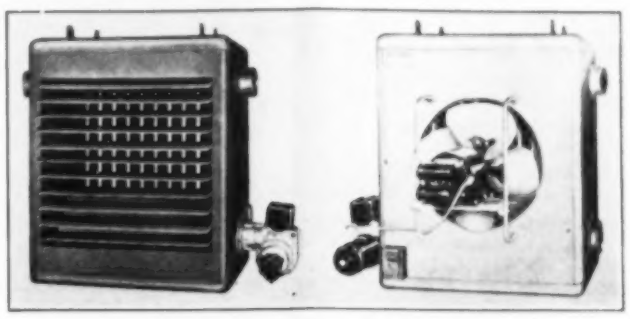
Cut Copying Costs . . . Use OZALID

Johnson City, N. Y.
A Division of General Aniline & Film Corporation
"From Research to Reality"
Ozalid in Canada—Hughes-Owens, Ltd., Montreal

If you write maker identify as IEN - 10137

HEATING . . Oil fired space unit, burner rates 220,000 btu. per hour

Source: DELTA HEATING CORP.
Reading R. R. at Cole St., Trenton 8, N. J.



For locations requiring high air delivery

Air delivery rates 5,730 cfm. through this new Model UH-220 oil fired unit heater. The air handling fan is driven by a ½-hp. motor. It can "throw" the heated air for an effective distance of 150 ft. in front of the heater housing.

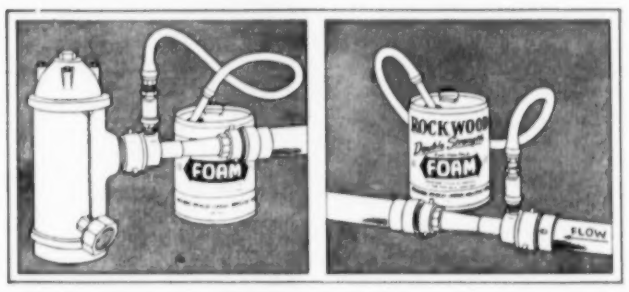
The gun type burner and exhaust gas outlet can be located on either side of the housing which measures 39 by 21 by 49½ inches. Products of combustion move upward through vertical flues around which the air is circulated by the fan. Assembly weight is 390 pounds.

Construction includes a stainless steel combustion chamber, operating controls for 110-volt single-phase ac. The fan measures 24 in. in blade diameter. The burner takes 2 gph. The fuel pump serving the burner has lift capacity to 20 feet. An auxiliary pump, for higher lift, or for multiple units, can be specified. Mounting is by suspension from overhead or by setting upon a platform or dolly in temporary location.

If you write maker identify as IEN - 10138

EXTINGUISHING . . Foam eductor feeds foam liquid into a hose line

Source: ROCKWOOD SPRINKLER CO.
36-40 Harlow St., Worcester 5, Mass.



Underwriters' approved

Venturi section of this new Foam Eductor applies in a hose line not more than 100 ft. from the nozzle. The short section of attached hose and head fitting reaches into a container of foam liquid. The eductor picks up the correct amount of liquid over an operating pressure range of 75 to 175 lb. of water moving through the main hose line. The hose nozzle is kept wide open while the eductor is operating.

Two hose sizes are 1½ and 2½ inches. Each is available in two designs, one for regular, 6 per cent foam liquid, the other for double-strength 3 per cent liquid. The eductor is available also for use with wetting liquid in place of the foam.

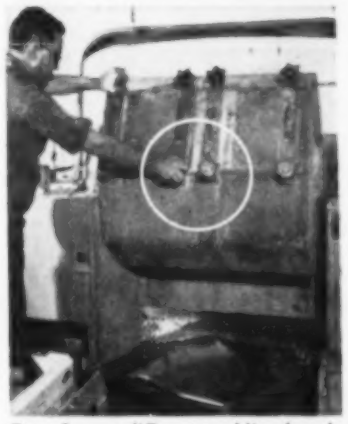
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10139

If you write maker identify as IEN - 10140

Get the "TOUCH OF GOLD"

FREE sample tumbling from Norton



One of many different tumbling barrels in the new Norton barrel-finishing department.

Find out what barrel-finishing can do for you — without cost. Send your samples of metal parts to the newly enlarged Norton barrel-finishing department. With your processed samples you'll receive recommendations on barrel type, speed, etc., and amounts of ALUNDUM* Tumbling Abrasive and compound.

Finishing parts ranging from tiny needles to several-pound forgings, we have provided many manufacturers with the "Touch of Gold" that means worthwhile savings.

No obligation. Include with sample a finished sample to be matched, plus data on your present barrel-finishing equipment, if any. Mail to Norton Sales Engineering Department, Abrasive Division. NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

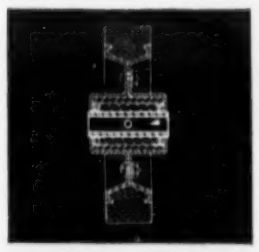
*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

NORTON ABRASIVES
Making better products . . . to make other products better

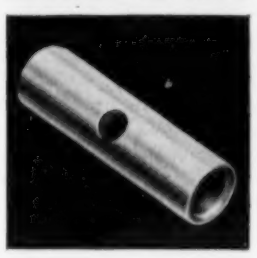
If you write maker identify as IEN - 10141

Tube Talk — THE "HOW-TO" COLUMN

PROBLEM:
To find suitable material for spacer bushing of rubber-tired, steel-disc truck wheels made by Jarvis & Jarvis, Inc., Palmer, Massachusetts. Former tubing used did not have uniformly smooth surface, was hard to clean off and a source of bearing trouble.



SOLUTION:
MT 1015 Carbon Steel Seamless Cold-drawn Tubing, supplied by Superior Tube Company, provided smooth surface required, plus close temper control for machining.



RESULT: Bearing troubles completely cleared up since adoption of Superior tubing. Jarvis & Jarvis also reports Superior tubing easy to cut, chamfer and drill, and "technical help from Superior distributor excellent."

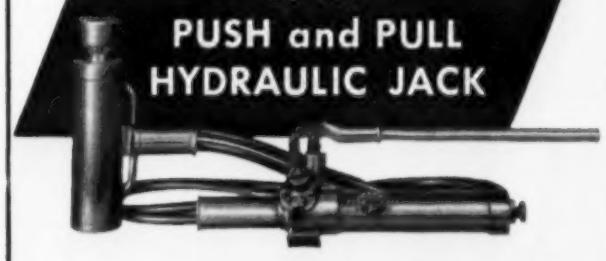
Suggestion—Write for information and literature today.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

If you write maker identify as IEN - 10142

SPEED UP ★ PRODUCTION ★ MATERIALS HANDLING ★ MAINTENANCE

WITH A
HEIN-WERNER
20 TON
PUSH and PULL HYDRAULIC JACK



You'll be amazed at the time and manpower you can save on tough lifting, moving, pressing, ejecting, clamping, or straightening jobs with a Hein-Werner J-20 Hydraulic Jack.

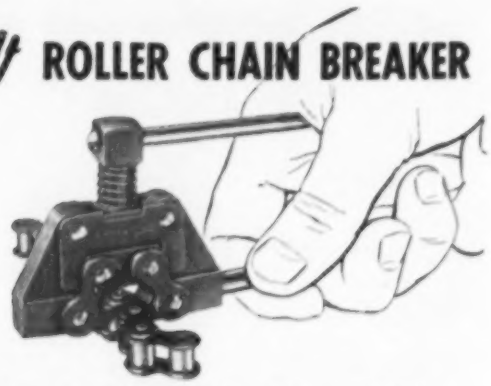
The J-20 can be carried anywhere in the plant . . . set up in seconds . . . easily operated by one man. It will push up to 20 tons or pull 13½ tons. You merely turn a valve from right to left to change the action. Remote control pump works at any angle, in any position, without becoming air-bound. Safety valves prevent overloading. Varied attachments are available to adapt the jack perfectly to any type job. Other Hein-Werner models of 4 and 10 ton capacities are also available. See your industrial supply distributor or write us.

HEIN-WERNER CORPORATION
Waukesha, Wisc.

Hein-Werner HYDRAULIC JACKS

If you write maker identify as **IEN - 10143**

New ROLLER CHAIN BREAKER



BREAK CHAIN IN SECONDS without damage to chain.

BREAKS ANY SIZE CHAIN No. 25 to No. 60.

BOSTON GEAR QUALITY THROUGHOUT Vital parts heat treated for wear-resistance and high strength.

AT YOUR BOSTON Gear DISTRIBUTOR Ask for new Chain Breaker folder. Explains simple operation.

Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

BOSTON *Gear*

POWER TRANSMISSION PRODUCTS

If you write maker identify as **IEN - 10144**

How to **ADD MAN HOURS** WITHOUT **ADDING MEN!**

VISE-GRIP WRENCH

Equip with the world's most useful hand tool. Vise-Grip is a whole tool kit in one trim tool—HANDIEST tool you can own. LOCKS to work with TON-GRIP. Won't slip. Bends, turns, twists, pulls, cuts, ratchets, HOLDS! Adjusts quickly to non-locking, super-pliers action. *Does more jobs easier, quicker, than any other tool.*

7" and 10", with or without wire cutter, only $1.85 to $2.60 at your dealer. Also special Sheet Metal Tool, Welding Clamp, and toggle C-Clamp.

No. 10-W
$2.60

Made Only By

PETERSEN MFG. CO., Dept. IEN-9, DeWitt, Nebraska

If you write maker identify as **IEN - 10145**

WHEN CRITICAL MATERIAL IS SCARCE—

Repair **POWER CABLES**

with **AMP** SOLDERLESS

CONNECTORS

HEAVY DUTY PNEUMATIC TOOL #69015

Either "STUB" or conventional side position crimping with AMP's double-handled, Pneumatic Tool. Interchangeable jaws for wire sizes #6 to #1/0.

SOLISTRAND BUTT CONNECTORS

Can be used on solid, stranded or irregular shaped wire. These pure copper connectors make strong, vibration-proof permanent splices #22 to #4/0.

AMP

AMP TRADE MARK REG. U.S. PAT. OFF.

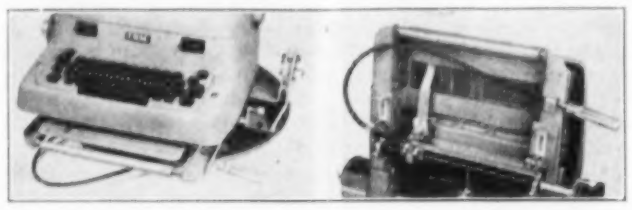
AIRCRAFT-MARINE PRODUCTS, INC.
2100 Paxton Street, Harrisburg, Pa.

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

If you write maker identify as **IEN - 10146**

Final adjustments on the electric typewriters made by International Business Machines Corp., 590 Madison Ave., 18th



Floor, New York 22, N. Y., are made on an indexing fixture employing a flexible shaft screwdriver. The fixture is indexed by turning a crank so the screwdriver comes into position to engage the adjusting screws one at a time on individual type bars. The operator does not have to lift the work or look under it when making adjustments.

If you write maker identify as **IEN - 10147**

Electronic equipment for railroad traffic control is a reality on a new South American railroad that will transport iron ore from mine to ship in Venezuela. The installation has been made by Union Switch & Signal Division, 403 Liberty Ave., Pittsburgh 22, Pa. Equipment includes centralized traffic control and coded carrier with transmitters and receivers developed by Radio Corporation of America. An operator, seated at the control panel in the seaport yard, pushes buttons and moves small levers to control train movements over the 90-mile right-of-way.

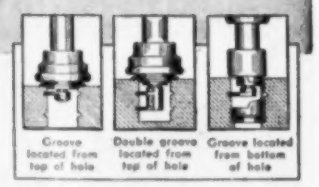
If you write maker identify as **IEN - 10148**

If you operate engine driven industrial trucks manufactured by Towmotor Corporation, 1224-28 E. 152nd St., Cleveland 10, Ohio, you can add a Hobbs Engine Hour Meter. The company will sell you any number you want along with instructions for installation. The meter has three pointers. They make one revolution each in 10, 100 and 1,000 hours. The pointers move only when the ignition switch is closed. They will tell you the number of hours a truck has been operated in a total of 10,000, or on a shift, or a week, or a month, if you keep daily record of the totals shown on the three hands.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10149**

Waldes Truarc Internal Grooving Tool
for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!



Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate...readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine...assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling...resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes...extra features

WALDES TRUARC GROOVING TOOL

WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

If you write maker identify as **IEN - 10150**

POSITIVE ACTION UNDER ALL CLIMATIC CONDITIONS

For Adverse Environmental Conditions..... Specify **HAYDON'S** *New Hermetically Sealed Precision Snap Switches*

This hermetically sealed precision snap switch is the answer where sand, dust, ice, humidity, oil, grease, water or fungus cause ordinary switches to fail.

Here is the story on the Haydon hermetically sealed snap action switch:

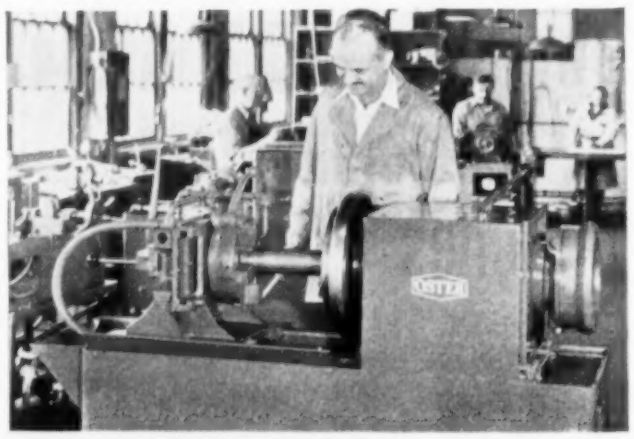
1. Smallest hermetically sealed switch on the market
2. Longer life
3. High contact pressure — resistant to vibration
4. Actuator pin bonded in specially developed silicone (like a shock mount)
5. Available in single pole, double throw — two-circuit type or double pole, double throw. (DPDT is slightly larger.)
6. Interchangeable mounting-wise with certain other widely used unsealed switches.
7. Sealed construction assures positive operation under practically all climatic conditions (from −70°F to +200°F)

Currently Being Used in Aircraft Applications

Send for descriptive bulletin

HAYDON SWITCH CO. 232 NORTH ELM ST., WATERBURY, CONN.

If you write maker identify as **IEN - 10151**



Here's the NEW

OSTER

Thrift Model Threading Machine

Rugged...low priced... easy to operate

The new Oster No. 784 Thrift Model is the newest member of the complete line of Oster money-saving threading machines. A machine designed to thread pipe and bolts quickly, efficiently, over a wide range, it is ideal for maintenance departments.

Features of the new Thrift Model assure threads of highest quality even when the machine is operated under rough conditions. For instance, the front gripping chuck of the new Oster Thrift Model is fast and positive. Operated by handwheel, it requires no wrench and handles pipe size change quickly and easily. The rear centering chuck of the new Thrift Model is universal, wrenchless, quick-acting . . . non-binding.

Two quick opening, detachable, lever operated die heads cover the entire pipe range of 1" to 4" and bolt range of ¼" to 3". Extra range of the Thrift Model is ½" and ¾". These die heads are provided with both positive locking device and means for adjusting all dies simultaneously for over or under-size threads.

The new Oster Thrift Model is built to handle any maintenance job quickly and economically and it is priced much lower than any other machine of equal range. For a free, fully illustrated, factual booklet about the Thrift Model, write us today.

THE OSTER MANUFACTURING COMPANY

Main Office and Factory: 2053 East 61st Street, Cleveland 3, Ohio

1893 - CELEBRATING 60 Years Leadership in the Threading Industry - 1953

If you write maker identify as **IEN - 10153**

Precision Laboratory Measurement of
- Small quantities of gas or air flow
- Replacement for sight feed bubblers

DWYER SERIES 490 FLOWMETER

Accuracy—Readings are on-the-line—not approximations.

Easy to read—Light enters from all sides of the solid acrylic transparent body for easy reading. Tapered indicating tube precision drilled, reamed and polished.

Control Valve—Built-in.

Scales—Standard 0-2, 0-4 or 0-10 CFH. Air, 0-100 CC/Min. Water. Special ranges available in production quantities.

Models—Single or multiple units, surface mounting type.

Mounting Holes—To specification.

Fittings—⅛ SPT connections provided.

Dimensions—4" high x 1" square.

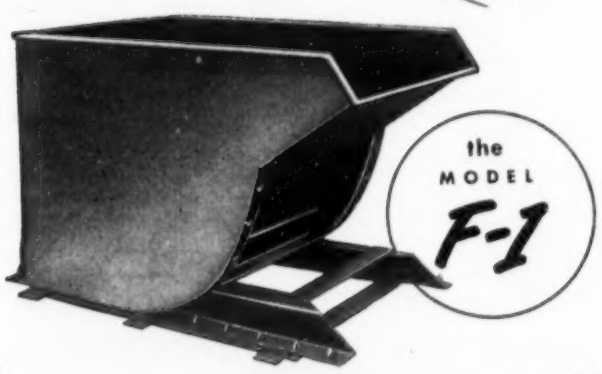
Ask for complete information.

F. W. Dwyer Mfg. Co.

307 S. Western Avenue Chicago 12, Illinois

If you write maker identify as **IEN - 10154**

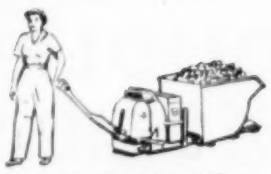
Here's the Answer to BULK MATERIAL HANDLING PROBLEMS



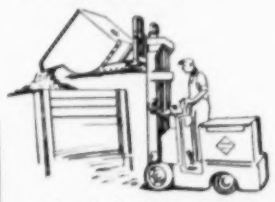
Phillips "Skid-Dump"

Bulk materials of all kinds are handled with maximum efficiency at minimum cost . . . with the Model F-1 "Skid-Dump." Used with pallet or fork lift truck, it automatically dumps and returns to original position. Smooth, rolled edges of 3/16" steel plate, welded undercarriage provide safety, long-life, strength and durability. Capacity—1 cu. yd.

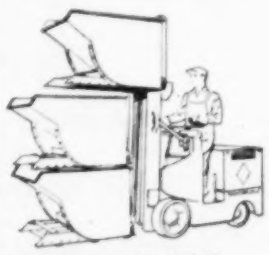
Write for Bulletin E-15



Heaviest materials easily handled with pallet truck.



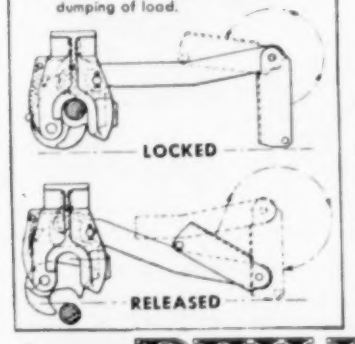
Automatically dumps materials, returns and locks in original position.



Conveniently stacked, empty or full.

New Safety Lock*

Provides maximum safety for operator—prevents accidental dumping of load.



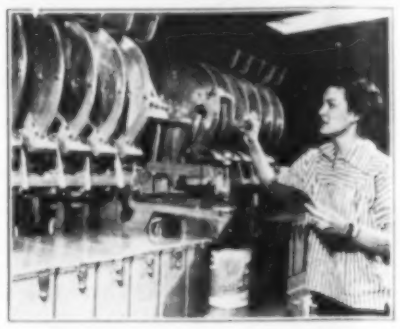
MANUFACTURERS SINCE 1863 **PHILLIPS** (MINE AND MILL SUPPLY COMPANY) PITTSBURGH, PA.

MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—*Continued*

If you write maker identify as **IEN - 10156**



Fresh paint, in quart to 5-gallon unit quantities, in exact color blend to your specifications or to a color card of some 2,000 blends, is set up and delivered in seconds by a new dispensing machine. The machine measures 9 by 3 by 6½ feet. It holds quantity amounts of 12 basic ingredients. It keeps them individually stirred up so they are ready to deliver into the selected mix. It delivers them when the operator makes the setup and releases them. No clog, no drip, no waiting, no deviation from exactly what you have asked for. Martin-Senour Co., 2518-22 S. Quarry St., Chicago 8, Ill., is the manufacturer.

If you write maker identify as **IEN - 10157**

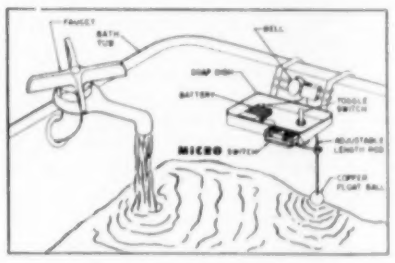
Labelon Tape Co., 448-52 Atlantic Ave., Rochester 9, N. Y., reports a new use for its self-adhesive "write-on" tape in identifying electric circuits at the switch boxes. The tape is cut to desired length, adhered dry to the box cover. Circuit identification is written on it with any hard blunt instrument. The markings appear under the transparent face against a clear white background. They can not be smudged out, will not fade. The company will send you a sample of the tape.

If you write maker identify as **IEN - 10158**

Go to Filtration Engineers Inc., 153-57 Oraton St., Newark 4, N. J. if you want synthetic filter fabrics that are proof against fraying and raveling in holes and along cut edges. The company is cutting its Feon filter cloth in shears that have electrically heated blades. These blades melt their way through the fabric and fuse the loose ends together.

If you write maker identify as **IEN - 10159**

Now you can control the depth of water, or position of the high water ring on the side of your bathtub. We are indebted to Micro Division, for the information, 30 E. Spring St., Freeport, Ill. Micro reports the new development in its Micro-Tips Idea Exchange. Mr. Morris G. Moses of Albany, N. Y., is the "idea man" in this case. Just study the drawing to make your own.



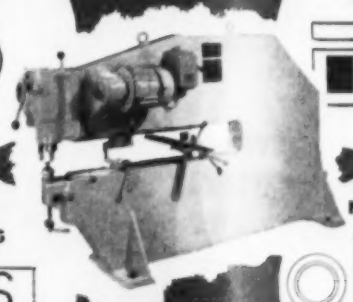
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10160**

PULLMAX Does all These Operations

SAVE TIME, LABOR & EXPENSIVE DIES

CIRCLE CUTTING · STRAIGHT CUTTING · SLOT CUTTING · BEADING · FOLDING · LOUVERS



CHOICE OF 9 SIZES TO FIT YOUR REQUIREMENTS

From 16 ga. up to 11/32" capacity

MODERNIZE YOUR SHOP WITH PULLMAX

WRITE FOR LITERATURE AND PRICES

BACKED BY NATIONAL SALES AND SERVICE

AMERICAN PULLMAX COMPANY, INC.

2459 NORTH SHEFFIELD AVENUE · CHICAGO 14, ILLINOIS

If you write maker identify as **IEN - 10161**

BALL BUSHING

The BALL BEARING for your

LINEAR MOTIONS

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A or Low-Cost Series B BALL BUSHINGS.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on *guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.*

Improve your product. Up-date your design and performance with BALL BUSHINGS! Now manufactured for ¼", ½", ¾", 1", 1½" and 2½" shaft diameters.

THOMSON INDUSTRIES, INC.
Dept. I MANHASSET, NEW YORK
Write for descriptive literature and the name of our representative in your city.

LOW FRICTION • LOW MAINTENANCE
ELIMINATES BINDING AND CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LONG LIFE • LASTING ALIGNMENT

Also manufacturers of NYLINED Bearings — DuPont NYLON with in a metal sleeve — for rotation and reciprocation.

PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

If you write maker identify as **IEN - 10162**

TORCH-O-MATIC

FOR FASTER, EASIER SOLDERING BRAZING—MELTING—

THE FULLY AUTOMATIC ON-OFF AIR-ACETYLENE GAS GUN

Instant, one-hand operation saves time, gas, and eliminates open flame hazards when not in use. Just pull the trigger and the air-acetylene gas lights instantly, release and it's out! As simple as all that, and **no "time-out" to light up and adjust.** The Torch-o-matic gas gun pays for itself many times over in savings and convenience. Three sizes of tubes and nozzles to take care of any job. Will fit your present equipment. Halide Leak Detector attachment locates the slightest refrigerant gas leak. Write for the details on how Torch-o-matic can speed your operations and cut down costs.

VELOCITY POWER TOOL COMPANY

201 North Braddock Avenue • Pittsburgh 8, Pa.

If you write maker identify as **IEN - 10163**

Less Fatigue More Production WITH KELLER AIR TOOLS

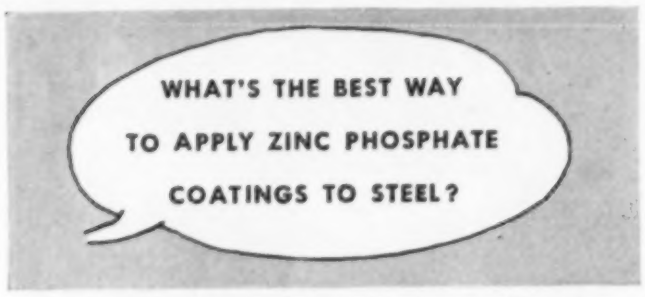
Keller Pneumatic Grinders are built for heavy production grinding . . . they combine great power and light weight. A built-in governor maintains constant speed — saves wear on grinding wheels. Keller also makes die grinders and vertical grinders.

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company

GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 10164

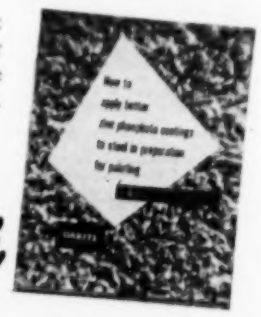


In preparation for painting, Oakite CrysCoat HC develops an excellent zinc phosphate coating that weighs more than 200 milligrams per square foot, easily meeting U. S. Government Specifications:

JAN-C-490, Grade 1 **57-O-2C, Type 2, Class C**
PA-PD-191, Rev. A

The CrysCoat HC process is remarkably easy to apply in tanks or in washing machines.

FREE For illustrated booklet *"How to apply better zinc phosphate coatings to steel,"* write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

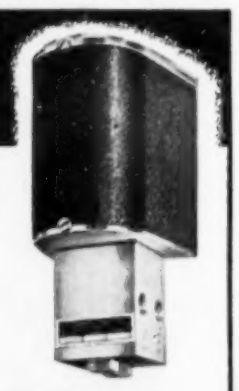


SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

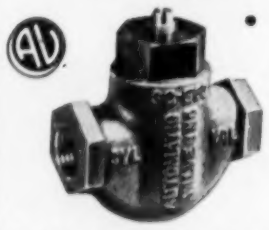
If you write maker identify as IEN - 10165

Solenoid VALVES



PILOT VALVES
3-WAY 4-WAY
For operating Master Valves and Small Cylinders

• • •



***Speed Control* VALVE**
Controls speed of Air and Hydraulic Cylinders

***3-Way and 4-Way* VALVES**
Pilot Operated
Sizes 1/4" — 3/8" 1/2" and 3/4"
Write for Bulletin

AUTOMATIC VALVE CO.
37421 GRAND RIVER AVE., FARMINGTON, MICH.

If you write maker identify as IEN - 10166

HOT OFF THE PRESS
1953 EDITION
Mall

PNEUMATIC TOOL CATALOG

Yours free—the new, info-packed MALL catalog showing the very latest pneumatic tools available. It's a MUST for your reference file. Send for it today and get all the facts about the world-famous MALL line of completely modern pneumatic production tools . . . a size and style for every need.

RUSH me a free copy of the 1953 MALL Pneumatic Tool catalog.
*Name*_____
*Firm*_____
*Address*_____

MU-23

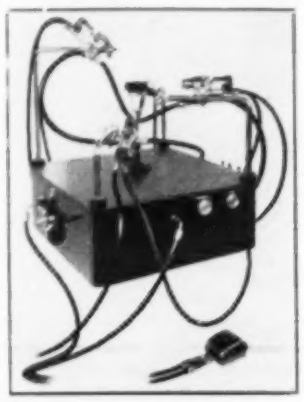
Get Your FREE COPY NOW!

MALL TOOL COMPANY 7782 S. Chicago Ave. Chicago 19, Illinois

If you write maker identify as IEN - 10167

PAINTING . . Spraying machine for work mounted on a rotating spindle

Source: CONFORMING MATRIX CORP.
330 Toledo Factories Bldg., Toledo 2, Ohio



For short production runs

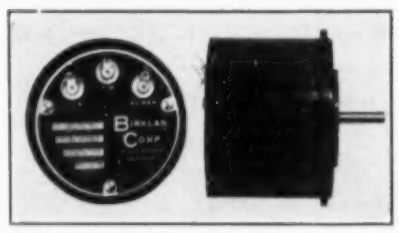
Four spray guns can be set at adjustable heights and angles as required by work that mounts on a motor driven spindle at the center of this new machine. A dial is rotated at the side of the 18 by 18-in. housing to set the spindle speed at a desired rate between 100 and 400 rpm. A second dial is set to control the length of time that the spray guns will operate after depressing a foot operated valve.

The spindles and gun start into action at this instant. They stop as determined by the timer setting. A work holder is available to serve as a masking device also when it is required. The table stands 8½ in. in height. List price is $990 without work holder.

If you write maker identify as IEN - 10168

RHEOSTAT . . Potentiometer type for electrical or mechanical rotation

Source: BIRKLAN CORPORATION
202 E. 3rd St., Mount Vernon, N. Y.



Ninety inch coil

Resistance range is 500 to 300,000 ohms overall for this new Series-3500 potentiometer rheostat. It features linearity within 0.01 per cent. Each unit is calibrated and a continuous linearity curve is supplied with it. Rotation can be specified between 360 and 3,780 degrees. A built-in nut type limiting stop is a standard component. It is mechanically independent of the wiper arm. The housing and shaft are concentric so the unit can be cradle mounted for differential drive when this arrangement is desired.

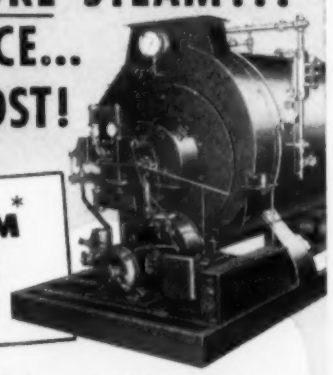
If you write maker identify as IEN - 10169

Fogging difficulties are eliminated on water meter registers by application of a new transparent plastic sealing cap that completely encloses the register and change gears. The interior is filled with a non-freezing transparent fluid. The cap is made of Tenite and is available for specified meters from Fog-Tite Meter Seal Co., 2837-41 W. 58th St., Seattle 7, Wash.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10170

Produce MORE STEAM... in LESS SPACE... at LOWER COST!
WITH



CYCLOTHERM* CYCLONIC COMBUSTION

• In thousands of installations, Cyclotherm Steam Generators set new standards for performance and economy. Exclusive Cyclotherm flame control produces 66% more power per sq. ft. of heating surface than competitive type boilers and requires only 3 sq. ft. of heating surface per Boiler Horsepower . . . saving up to ⅓ on installation space.

- **Guaranteed 80% efficiency**
- **Complete on arrival. Only 4 easy connections**
- **Fully automatic controls**
- **Full power operation in 15 minutes**

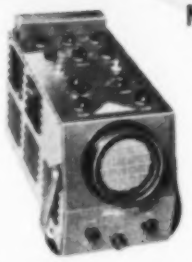
Cyclotherm Steam Generators are designed for 18 to 500 h.p., 15 to 200 psi operating pressures. Approved—ASME, Nat'l. Board Standards, Underwriters Laboratories, Inc.

*Reg. trade name *Write for free catalog today. Dept. 29*

CYCLOTHERM STEAM GENERATORS
CYCLOTHERM DIVISION UNITED STATES RADIATOR CORP. OSWEGO, NEW YORK

If you write maker identify as IEN - 10171

THE **WIDE BAND POCKETSCOPE** BY WATERMAN
MODEL S-14-B



Another Waterman POCKETSCOPE confirming the obsolescence of conventional oscilloscopes. Characterized by wide band amplifier fidelity without peaking as well as amazing portability. S-14-B POCKETSCOPE is ideal for laboratory and field investigation of transient signals, aperiodic pulses, or recurrent electrical wave forms.

Wt. 14 lbs. 12" x 6" x 7"

Vertical channel: 50mv rms/inch, with response within —2DB from DC to 700KC, and pulse rise of 0.35 μs. Horizontal channel: 0.3v rms/inch with response within —2DB from DC to 200KC, and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls, with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization, from ½cps to 50KC, with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-A	HIGH GAIN	POCKETSCOPE
S-15-A	TWIN TUBE	POCKETSCOPE

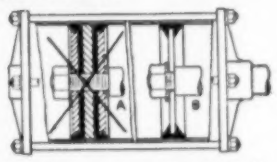
Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as IEN - 10172

Double Acting One-Piece PISTON

HERE'S REAL SIMPLIFICATION PATENTED



A complete one piece, Double Acting PISTON—so skillfully designed that 1 part (B) actually replaces 5 to as high as 7 parts, ordinarily used in conventional assembly (A).

This radically new ALLIS Rubber Piston is a unit piston plate and packing. Cup Members are constructed of highly resistant synthetic rubber, molded integrally to a solid metal plate. Time Tested and Proven—Highly Efficient with constant Lip Sealing action. Cannot be installed incorrectly.
Available in all standard cylinder sizes,—for Hydraulic and Pneumatic mediums such as oil, water, air, etc. Now being used by machinery manufacturers as standard or original equipment. Write for details today.

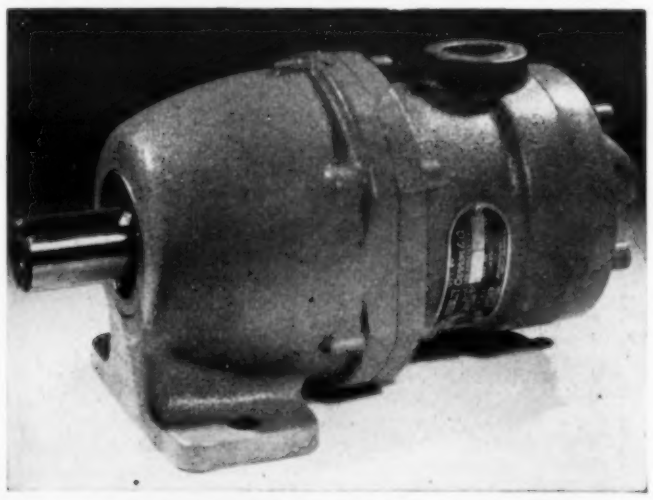
We produce MOLDED MECHANICAL RUBBER PRODUCTS . . . Bellows, Boots, Packing, Seals, Diaphragms, Dampeners, etc. Each part is Laboratory Controlled and Formulated to meet your operational requirements.

Write today for our illustrated booklet — 32 pages of vital information

ALLIS RUBBER CORPORATION
Tel.: MOnroe 6-5050 • 123 N. Green Street, Chicago 7, Ill.

If you write maker identify as IEN - 10173

DUDLEY "NUTATING PLATE"
HYDRAULIC MOTORS

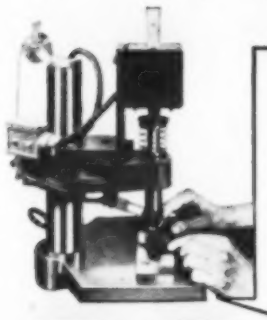


Series 625—1½—11¼ GPM—0 to 1,000 PSI

Used by leading manufacturers as standard equipment. Proved by over 4 years of successful performance. No gears; no vanes; no cams or ball joints. Self-adjusting for all viscosities, temperatures and pressures. Write for bulletin, and name of nearest representative.

EASTMAN PACIFIC COMPANY
2320 East 8th Street • Phone TRinity 6317 • Los Angeles 21

If you write maker identify as IEN - 10174



- Presses parts together — then stakes
- Complete safety for worker's hands
- Fully adjustable, uniform blow
- Lightest model only

$154.50

New ELECTROSTAKE

STAKES, RIVETS

FASTER, EASIER, SAFER!

All-electric, solenoid operated ELECTROSTAKE reduces operator fatigue — increases production.

WRITE for *all* the details!

BLACK & WEBSTER, INC.

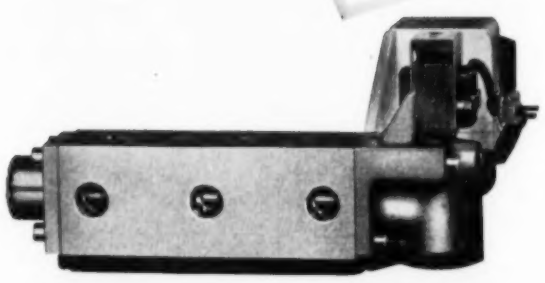
Dept. 17 445 Watertown St., Newton 58, Mass.
Bigelow 4-6370

Manufacturers of ELECTROPUNCH and ELECTROPRESS

If you write maker identify as IEN - 10175

Quick-As-Wink AIR AND HYDRAULIC Control Valves

FEATURE THIS MONTH

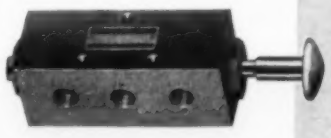


Single Plunger Solenoid Pilot Operated Valves

They'll give you millions of cycles of efficient trouble-free operation

● Quick-As-Wink Solenoid Valves are unsurpassed for positive, trouble-free dependable service . . . they give users millions of cycles of fast, high speed — and safe — operation. All parts are rugged. Low amperage requirement of the solenoid eliminates intermediate relays and simplifies electrical circuits. ⅜" to 2" sizes. 2-way, 3-way or 4-way actions. Bucking cylinder or double solenoid return. Send for the data sheets. Get full details about Quick-As-Wink, America's outstanding valve line, today.

also the following

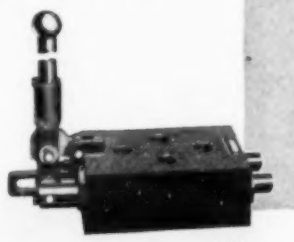


PUSH BUTTON OPERATED AIR VALVES

Push-pull or push and spring return operation — ⅛" and ¼" tapped connections. Widely used for controlling cylinders and many other applications. Air to 125 psi — vacuum—can also be used in low pressure hydraulic service.

LEVER OPERATED HYDRAULIC VALVES

Two position or three position valves ½" to 1½" sizes for line pressures 1000 to 5000 psi. Can be furnished in neutral, compound-exhaust or compound-on actions. Pilot cylinder operated types available up to 4".



For Fully Descriptive Data Sheets Write

C. B. HUNT & SON, Inc.

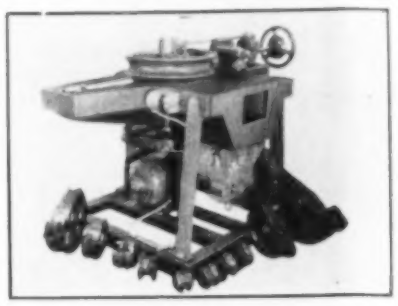
Hand, Foot, Lever, Cam, Pilot, Diaphragm and Solenoid Control Valves

2032 EAST PERSHING STREET • SALEM, OHIO

If you write maker identify as IEN - 10177

BENDING . . Motor driven machine rotates mandrel, for pipe and tube

Source: AMERICAN PIPE BENDING MACHINE CO.
13-17 Furnace St., Poultney, Vt.



Ready to operate

Type 2PBR is a new assembly employing motor drive for the previously developed Type A-30 hand bending machine. The new assembly will handle pipe in standard weight from ½ to 2 in. or double-extra-heavy pipe to 1½ inches. It will make bends to any angle, maximum at 180 degrees. Assembly includes a standard motor with drum type reversing controller and the required rollers and quadrant mandrels for the fixed radius bends. Minimum radius is five times pipe size. Maximum radius is 13 inches.

If you write maker identify as IEN - 10178

FLOOR . . Sponge rubber mat provides comfort for standing workers

Source: DURABLE RUBBER PRODUCTS CO.
547-51 W. Fulton St., Chicago 6, Ill.

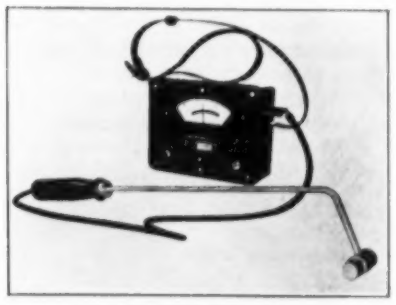
Material sample upon request

Beveled edges on four sides, to prevent tripping, and corrugations on both faces to eliminate slipping, characterize the company's recently improved standing mat, previously described IEN-7693-49. Sizes range to 4 ft. in width and to 35 ft. in length. Thickness is ⅜ inch. List price for an 18 by 36-in. unit is $3.75.

If you write maker identify as IEN - 10179

TESTING . . Tin content indicator reads per cent tin in alloy with lead

Source: BARBER-COLMAN COMPANY
1312-16 Rock St., Rockford, Ill.



Bulletin F-5609

New sensing head and an improved meter are employed in the Wheelco portable tin content indicator, previously described IEN-9864-50. The new head is plug-in design. The instrument is designed for manufacturers employing quantities of solder. It enables them to check the molten alloy quickly. It measures the differential temperature of the transformation point of a reference sample of known tin content and the "unknown" sample. The reading is direct in per cent of tin for the unknown. List price is $118.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10180

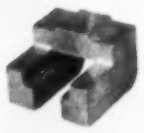
MACHINE PARTS and BEARINGS *by Powder Metallurgy*

SELF-LUBRICATING BEARINGS:

Standard sizes as described in Metal Powder Association Standard No. 14-51T on (Metal Powder Sintered Bearings). Also special bearings. Write for complete information.

METAL POWDER MACHINE PARTS:

AUTOMOTIVE



TEXTILE

AIRCRAFT

Above are just three of the many types of metal powder machine parts we manufacture. Also manufacturing metallic friction materials and filters.

Metal powder machine parts can be purchased under several government and industry specifications. These include MIL-B-5687-A, MPA 16-52T and ASTM B-202-45T.

If you are reviewing costs on existing parts or estimating on new construction and will send us your prints, our engineers will:

(1) Furnish you with quotations if the part is adapted to our method of manufacture.

(2) Suggest possible modification in design to effect further economies.

(3) If the part is not feasible in metal powder suggest other practical methods of manufacture.

Powdercraft Corp.
750 Hayne Street
Spartanburg South Carolina

If you write maker identify as IEN - 10181

XLO

Ex-Cell-O Drill Jig Bushings Have All These Features . . .

- Selected premium grade tool steel.
- Precision ground inside and out and under the head.
- Concentricity assured by grinding on arbors after the holes are finished.
- Hardened to 62-64 Rockwell "C."
- Uniformity of material, dimensions, finish, and hardness.
- Prompt delivery from stocks of standard sizes in Detroit, New York, Los Angeles, and Toronto.
- Largest bushing users in the country are Ex-Cell-O customers.

Ask for Bushing Catalog No. 35371.

EX-CELL-O CORPORATION

53-17 DETROIT 32, MICHIGAN

If you write maker identify as IEN - 10182

Fans . . Blowers FOR ALL INDUSTRY

"Standard Units or Custom Design"

DOUBLE SWIVEL AEROSPOT

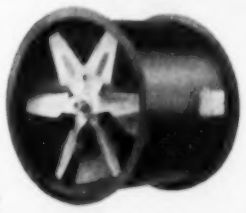
Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

6 Blade DYNAFLOW Unit

Also available in two and four blade types. Sizes, 16" to 36".



DUCTYPE BLOWER

Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 16" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 322 E. COLFAX AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 10183

TOP CAPACITY IN COMPACT PACKAGES

The double enveloping worm gear sets permit more gear teeth in continuous contact than conventional worm gear speed reducers. As a result, Cone-Drive reducers transmit bigger loads, permit small units, give more smoothness and provide long wear life.

Any way you figure it, you cut costs when you specify a Cone-Drive speed reducer from among a range of standard sizes having capacities from fractional to 800 HP, center distances from 2-in. to 18-inches, and ratios from 5/1 to 70/1.

That's what standard Cone-Drive speed reducers offer equipment manufacturers and users.

Write for your personal copy of our latest 8-page bulletin No. MH-53 and see how thirteen materials handling equipment manufacturers are putting Cone-Drives to work.

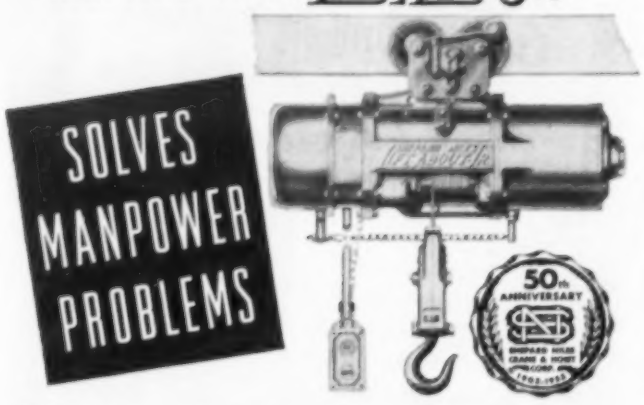
CONE-DRIVE GEARS

Division Michigan Tool Company

DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS 7171 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as IEN - 10184

SHEPARD NILES LIFT ABOUT JR.



- One man replaces many—and moves more goods faster—with a low-cost Shepard Niles Lift About Jr.! This light-weight Electric Hoist frees floor space for production, puts waste ceiling area to work. Loads of 500, 1,000 or 2,000 lbs. are handled easily by an older man, woman or youth.
- Learn how the Lift About Jr. fits into your production picture from a Shepard Niles representative. He'll help you select the right capacity and controls for your handling job. Write for latest bulletins today—and ask to have a representative call.

SHEPARD NILES
CRANE AND HOIST CORPORATION
1027 SCHUYLER AVENUE, MONTOUR FALLS, N.Y.

If you write maker identify as IEN - 10185

step up production with

STOW flexible shaft MACHINES

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY

for your free copy of Catalog 51

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN - 10186

NEW SBS WATERLESS WASHSTATION*

"brings the washroom to the worker"*
for only $52.50 per unit
(F.O.B. Saginaw, Mich.
Towel Dispensers not included)

SBS Waterless Washstations are complete units for hand washing on the job. Because they dispense SBS-30 Waterless Skin Cleanser, these Washstations require no plumbing . . . SBS-30 is simply rubbed on the hands and wiped off along with all the soil.

SBS Waterless Washstations —

- **In Trouble Spots** — Avoids workers use of irritating, harmful solvents. Quickly and safely removes tars, greases, paints, varnishes and other hard-to-remove soils.
- **On the Production Line** — Cuts to a minimum costly interruptions for hand washing.
- **Actually Earn You Money** — By eliminating one unnecessary trip per day for hand washing by only 10 men, you can save up to $720 annually.

Fill out and mail the coupon below for complete information about SBS Waterless Washstations and our 30-day no-risk money back trial offer.

*Trademark 92-A

SUGAR BEET PRODUCTS CO., Dept. 7E, SAGINAW, MICHIGAN
Sirs: Please send me full information about the new SBS Waterless Washstation and your 30 day no-risk money back trial offer.
NAME _____
TITLE _____
COMPANY _____
CITY _____ ZONE _____ STATE _____

SUGAR BEET PRODUCTS CO. • Saginaw, Mich.
Chemical By-Products Division

If you write maker identify as IEN - 10187

TRUCK . . Automotive trailer carries 200 compressed gas cylinders

Source: TRAILMOBILE INCORPORATED
Robertson & 31st Aves., Cincinnati 9, Ohio

Made for Air Reduction

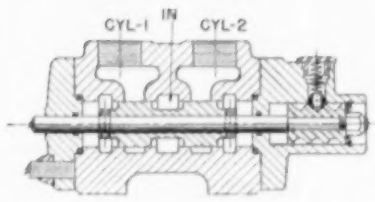
Aluminum body of this new special purpose trailer is characterized by the gas operated side gate with which 900 lb. of cylinders, loaded with compressed gas, can be raised or lowered between the truck floor and the ground. **The body** is fitted on the opposite side with conventional side outlets to load and unload the cylinders at a shipping dock level. The elevator is operated by a compressed gas cylinder located in a compartment at the front end of the unit.

Control centers at a lever that can be manipulated either from the ground or from the inside of the trailer. The trailer floor is made of extruded aluminum. The sides carry body rails with closely spaced holes into which chains can be inserted to prevent the cylinders from shifting in transit. Load capacity is 30,000 lb. or 200 of the steel cylinders.

If you write maker identify as IEN - 10188

VALVE . . Four way hydraulic with ball detent to hold set position

Source: RIVETT LATHE & GRINDER INC.
20-24 Riverview Road, Brighton 34, Mass.



Ask for Catalog 204

Seven sizes range from ¼ to 1½ in. in this new hydraulic operating valve. Five piston designs are available for varying circuit requirements. The valve is featured by the ball detent that is mounted at the outer end of the housing. It holds the piston in 1, 2 or 3 positions until it is moved by the operating mechanism at the opposite end.

The locking action of the detent permits installation vertically or horizontally and prevents vibration from causing movement of the piston. The valve stem is supported in bearings in the covers so it does not affect the operation of the piston in the valve body and cannot cause it to bind. The company has prepared a 28-page catalog containing illustrated specifications to be sent on request.

If you write maker identify as IEN - 10189

Assembly line methods have been applied in a new rebuilding service by Lincoln Electric Co., P.O. Box 3035-A, Cleveland 17, Ohio. You can send your worn engine driven, motor generator and ac. Lincoln equipment back to the the company in Cleveland for a complete overhaul. The reassembled welders are given final tests and are painted to meet factory inspection standards. The new service is known as Linc-conditioning.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10190

Cleans 12 miles of aisles in 6 HOURS!

The new Multi-Clean Motorized Sweeper can be a time and money saver for you just as it is for this large paper products plant. These 8 ft. warehouse aisles, the factory floors, sidewalks, alleys and freight docks are all cleaned in a fraction of the time formerly required by the old fashioned push broom method. Powered by a gasoline engine, the sweeper combines a Palmyra filled rotary sweeping brush 36 inches long and a powerful built-in vacuum unit. With side brush attachment sweeping width is increased to 4 feet.

Took 3 men with push brooms 8 hours to do the job.

Picks up dirt, dust, steel shavings, paper, grass, small metal parts and milling debris. The Sweeper's trouble-free service, easy operation and low price make it the best buy in the motorized sweeper field. For more information write—

MULTI-CLEAN®
2277 Ford Parkway, Dept. IE-9 St. Paul 1, Minn.

If you write maker identify as IEN - 10191

Every feature of tomorrow

IN TODAY'S NEWEST COOLERS

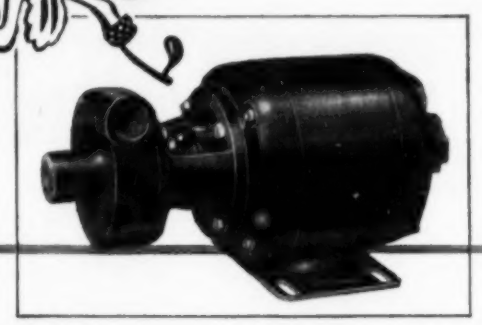
- top — Polished stainless steel or cast iron porcelain enamel depending on type
- cabinet — Bonderized steel, spot welded and finished in metallic gray
- projector — Famous Halsey Taylor Mound-Building type with automatic stream control for uniform pressure
- storage tank — Varying capacities, pressure-tested
- insulation — Full 2½" approved granulated cork
- cooling coil — Double wall construction or patented direct-flo, according to type desired
- thermostat — Temperature controlled by thermostat in direct contact with outlet water
- condenser — Hermetically sealed, air-cooled or water-cooled, depending on type selected

THE HALSEY TAYLOR CO., WARREN, O.

Halsey Taylor
COOLER FOUNTAINS

If you write maker identify as IEN - 10192

LOW COST OPERATION



CENTRIFUGAL PUMPS

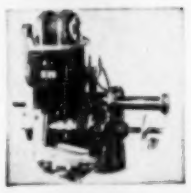
When centrifugal pumps are proportioned in size to their duties, costs are kept to a minimum. Eastern Industrial pumps do an efficient job. Weight, space, power, and costs are reduced. Heavy-duty application with trouble-free performance is yours with minimum operating costs.

Write for Eastern Centrifugal Pump Catalog 100-D

Eastern
INDUSTRIES, INC.
296 Elm St., New Haven, Conn.

If you write maker identify as IEN - 10193

Sure! Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .



Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

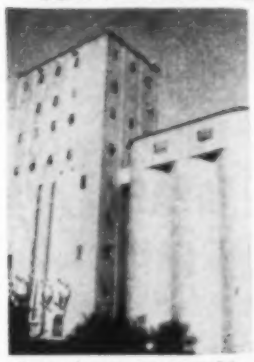
See your dealer or write for further details

TURNER 3R3 UNI-REDUCER
New simplified speed reducer mounts on motor shaft with torque arm to frame or base. Fits standard motors 1 to 5 H. P., 1800 RPM; 1 to 3 H.P. 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company
3479 Terrace Street Kansas City 8, Missouri

If you write maker identify as **IEN - 10194**

Years of Protection
With One Coat of
ROYSTON ALUMINUM MASTIC



Grain elevator protected by Royston Aluminum Mastic

- Protects against weathering, water penetration, absorption
- Resists corrosion by acid or alkali industrial fumes
- Ten times as thick as paint, non-reactive with other metals
- Remains flexible, won't peel, check, alligator, craze or pit
- Plasticized, for tight bond on metal, concrete or most brick
- Has heat reflective qualities typical of aluminum coatings
- Heavily pigmented with aluminum, two lbs. per gallon
- No sand blasting needed, easy to apply by brush or spray gun
- Ready-mixed, no thinner needed, covers 125 sq. ft. per gallon

Royston Aluminum Mastic is specially designed to combine a heavily embodied, corrosion resistant film with the heat reflective qualities typical of liquid aluminum paints or coatings. While the finish is not as brilliant as that of aluminum paints, it gives far greater protection against weathering and water penetration or absorption. Royston Aluminum Mastic is of the same superior quality as other Royston Laboratories' "tailor-made" protective coatings for industry.

For complete information and samples write . . . . . .

ROYSTON LABORATORIES, INC.
P. O. BOX 112-J, BLAWNOX, PA.

If you write maker identify as **IEN - 10195**

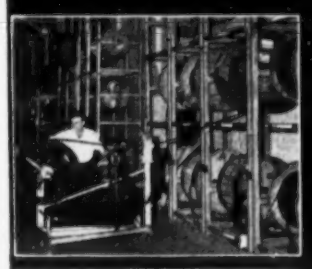
COLLAPSIBLE STOCK BOXES • ROLL RACKS • BULKHEADS

Well Stacked!

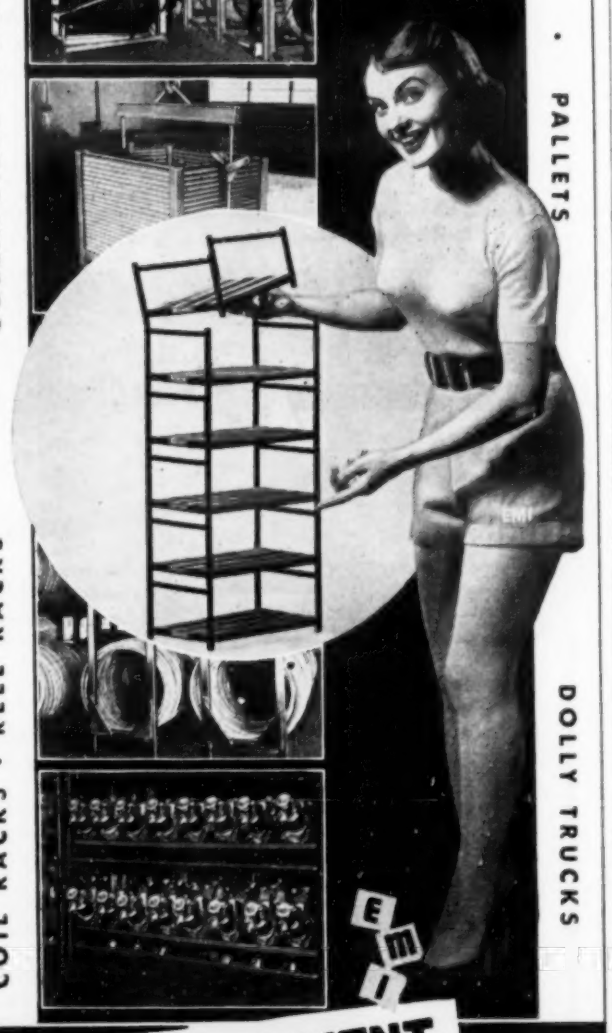
Let our rack specialists assist you in planning your new system to incorporate special economies in unit load handling—in production—in storage, regardless of the type material or product or unusual condition involved.

Our strong square tubular EMI racks save floor space and do it in the most efficient way.

STOCK RACKS • PALLET RACKS • PALLETS



Write for our catalog



COIL RACKS • REEL RACKS

DOLLY TRUCKS

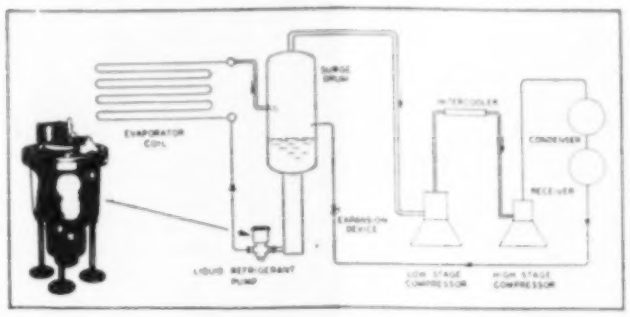
EMI EQUIPMENT MFG. INC.

21564 Hoover Road • Detroit 5, Michigan

If you write maker identify as **IEN - 10197**

REFRIGERATING . . Sealed pump and motor to circulate liquid Freon

Source: HEATRON INC.
331-35 Eberts Lane, York, Pa.



Ask for Heatron Bulletin

Gerotor Pump and its driving motor are assembled in a sealed housing, in this new refrigerant handling unit, to draw liquid Freon from a surge drum and pump it directly through one or more evaporator coils and back to the drum. That portion of the Freon which evaporates returns with the liquid to the surge drum from where it is picked up by the refrigerant equipment to be returned to liquid form and sent back to the supply in the drum.

Application of the pump reduces pull-down time by pumping constant quantities of liquid refrigerant to keep evaporator coils completely flooded. Temperature adjustment is simplified by elimination of thermal expansion valves. Varying temperatures can be secured by use of thermostatically controlled solenoid valves on individual evaporators.

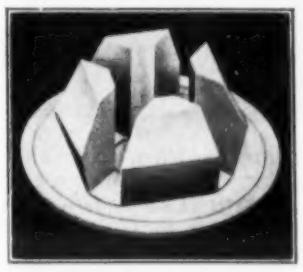
Lubrication for the pump bearings is carried into the pump with the Freon liquid. Oil is returned to the refrigerant compressor by bleeding a small part of the liquid from the pump discharge into the annular space around the motor. The liquid is vaporized there by the motor heat into Freon gas and liquid oil. Both are carried out through a connection in the bottom of the housing to the compressor suction line.

The bearing at the top of the motor is lubricated at intervals by a small hand pressure pump or through a copper line run from the crankcase of the compressor or from the discharge gas-oil separator. The pump is available in a range of sizes rating 4 to 40 gpm. It operates against 50-lb. differential pressure and temperature to minus 100 deg. F. Overall height is 22¾ or 28 inches. Speeds are 1,740 or 1,140 rpm., discharge connection is ¾ or 1¼ in., motor rates ¾ to 3 hp.

If you write maker identify as **IEN - 10198**

SEALING . . Plastic plug for holes in machines and equipment

Source: SHAKEPROOF DIVISION
2503 N. Keeler Ave., Chicago 39, Ill.

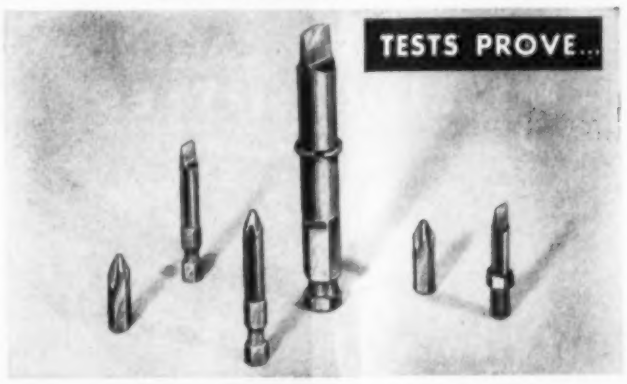


To replace metal

Four fingers, tapered to grip in a hole, square to fit in round or square holes from ⅛ to 1 in., are integral with the flanged cap on this new hole plug. The plug is pressed into a hole that is to be closed. It can be painted over to provide a moisture proof seal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10199**



HOMMEL ALL METAL BITS DRIVE MORE SCREWS!

Close tolerance machining of finest, toughest shock-and-abrasion resistant tool steel is the reason — the reason Hommel All Metal power screwdriver bits outperform, outlast all others! Tests by major aircraft and automotive manufacturers actually *prove* Hommel bits last longer, cut production costs. All types and sizes are now in the Hommel line — hex drive, threaded or "Stubbies" for slotted, Phillips or Frearson (Reed and Prince) screws. Write for new catalog.

HOMMEL ALL METAL BITS

"Quite a Bit—Lasts Quite a Bit Longer"

All Metal Bit Company, 727 Penn Avenue, Pittsburgh 21, Pa.

If you write maker identify as **IEN - 10200**

Automatic Bathing and Sterilizing for Electronic Condensers

● After girls place electronic condenser cans on Cyclone Stainless Steel Flat Wire Belts — all manual handling is eliminated. The Cyclone Belts convey the cans automatically through acid cleaning baths and sterile heating processes.

This is just one example of how Cyclone Metal Conveyor Belts can be used to speed up operations in all sorts of light manufacturing plants. Our engineers will be glad to give you more information, without obligation. And write Cyclone Fence, Dept. C-93 for a free Conveyor Belt Catalog.

U·S·S CYCLONE
METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

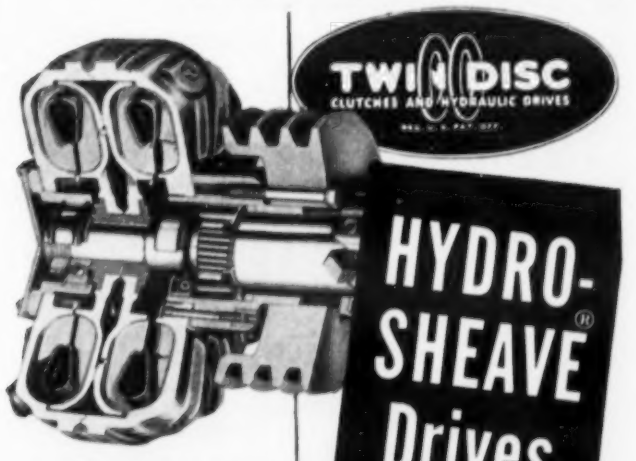
UNITED STATES STEEL

If you write maker identify as **IEN - 10201**

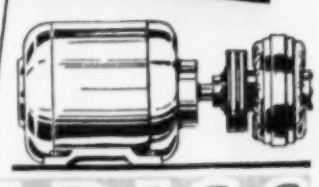
Yes, B&W Kaocast is versatile. This 3000F refractory castable speeds repairs . . . eliminates need for large inventory of special shapes. Discuss easy-to-use Kaocast with your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA. R-418

If you write maker identify as **IEN - 10202**



Prevent motor burn-outs from heavy starting loads, by slipping Twin Disc Hydro-Sheave Drives on the end of your motor shafts. Twin Disc Double-Circuit design fluid coupling cushions overloads; permits motor to accelerate to efficient speed and pick up loads smoothly. For motors (and engines) from ¼ to 50 hp. Write for name of nearest Authorized Hydraulic Dealer.



TWIN DISC

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

If you write maker identify as **IEN - 10203**

PROTECT DELICATE PARTS

RP Neoprene Rubber Mesh Matting . . .

Neotex

Photo Courtesy Penn Controls, Inc., Goshen, Ind.

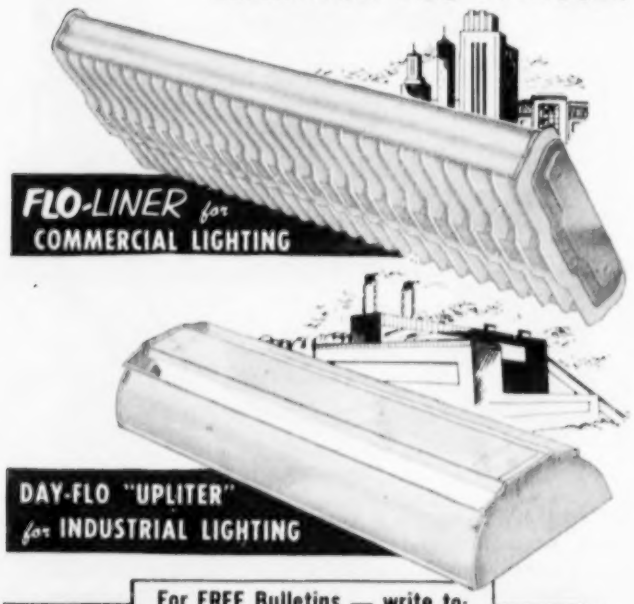
This user found Neotex ideal for work bench surfaces to eliminate breakage of delicate electrical equipment. Neotex, in roll form, and easily cut to any size or shape, has hundreds of industrial uses — in trays, on tables, benches, etc. — anywhere damage to parts or finishes means costly rejects. It's strong and rugged, resistant to oils, caustics, sunlight, heat or oxidation. Investigate Neotex for your plant.

RP . . . PRODUCTS OF RESEARCH

Write RESEARCH PRODUCTS CORP.
Dept. 71, Madison 10, Wisconsin

If you write maker identify as **IEN - 10204**

Whatever your Lighting Requirements . . .
THERE'S A *Wheeler* FIXTURE THAT'S RIGHT FOR YOU *and the* JOB!



For FREE Bulletins — write to:

Wheeler REFLECTOR COMPANY
275 CONGRESS STREET — BOSTON 10, MASS.
Distributed Exclusively Through Electrical Wholesalers

If you write maker identify as **IEN - 10205**

Portable
SELF-PRIMING CENTRIFUGAL PUMP

Designed for drainage service and a wide range of water-handling jobs, Deming Fig. 3304 is an efficient, economical pumping unit. Made in all-iron or all-bronze construction, as specified. Impeller mounted directly on engine shaft. Unit shown is powered by Briggs & Stratton 1½ H.P., four-cycle, air cooled gasoline engine. Suction 1½"; discharge ½"; net weight 84 lbs. Length 20"; width 13"; height 19". Capacity ranges from 10 g.p.m. against 80 ft. head to 90 g.p.m. against 15 ft. head. Write for details.

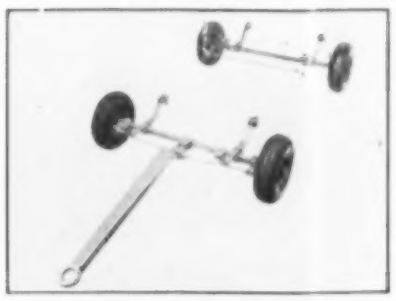
THE DEMING CO. • 521 Broadway, Salem, Ohio

DEMING PUMPS FOR ALL NEEDS

If you write maker identify as **IEN - 10206**

UNDERCARRIAGE . . Axle assembly for four wheel equipment mounting

Source: UNITED MFG. CO.
11 W. Interstate St., Bedford, Ohio



Pilot models available

Four-wheel unit shown in the illustration is a new assembly in the Caravan line of undercarriages. It meets Government Specification MIL-W-8005. It consists of a 1¾-in. square front automotive type steering axle unit and a 1¾-in. square rear axle unit. The axles carry wheels equipped with industrial tires. The steering axle is fitted with a towing bar and 3-in. eye.

If you write maker identify as **IEN - 10207**

PYROMETER . . Thermocouple head permits withdrawing element and block

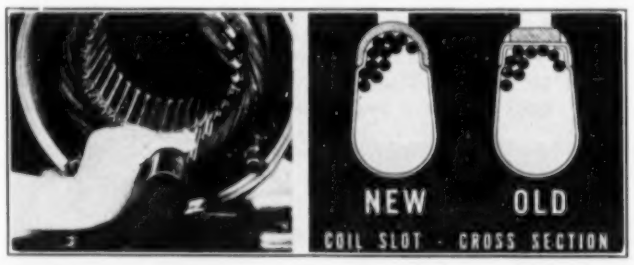
Source: CLAUD S. GORDON CO.
3002 S. Wallace St., Chicago 16, Ill.

Head, base, cap $2.25

Serv-Rite is a new malleable iron cadmium plated thermocouple head from which the element and connector block can be withdrawn and replaced easily. The unit is available in ½, ¾ and 1-in. threaded opening for the protecting tube. The friction lock cap can be removed and replaced after a quarter turn. The cap carries an asbestos gasket to seal out dirt and moisture. The connector block will stand up satisfactorily to 900 deg. F.

If you write maker identify as **IEN - 10208**

Channel wedges are molded to shape and size for a given motor or generator by Glastic Corporation, 1821-25 E. 40th St.,



Cleveland 3, Ohio. They are replacing asbestos, phenolic and fish paper wedges to retain the stator windings. The wedges increase available wire room in each slot. The one piece unit handles without difficulty. No punching or shearing operation is required. Originally developed for Westinghouse, the wedge is now available generally for specified use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10209**

STANDARD CARBIDE MILLING CUTTERS

From The World's Most Complete Stock of Standard Carbide Tools

Super TOOL COMPANY
21650 Hoover Road, Detroit 13, Michigan

If you write maker identify as **IEN - 10210**

LET ROBINSON DESIGN YOUR FORCED DRAFT FAN!

ROBINSON

FORCED DRAFT FAN

ROBINSON VENTILATING COMPANY
ZELIENOPLE, PENNA.

Designed to meet your specifications as to volume and pressure . . . High efficiency . . . Saves money in power cost during long service.
Let us select and design a Robinson unit for you.
For supply combustion air to Boilers . . . Open Hearth Furnaces . . . Reheat Furnaces . . . Heat Treating Furnaces . . . etc.

WRITE TODAY FOR BULLETIN No. 2101.

MAKERS OF FANS AND VENTILATING EQUIPMENT FOR FIFTY YEARS

If you write maker identify as **IEN - 10211**

Dear Sir:

NOW...You too, can get the NEW M & E Exhaust Fan Guidebook!

When M & E's new Exhaust Fan GUIDEBOOK was published, distribution was necessarily limited to M & E's present users, and 21,000 of them ordered it sight unseen, before the first release was made from the printer.

BUT NOW, you, too, can become a user of this new and different Exhaust Fan Catalog—which is not available without request. And you can do it on the time-saving basis as explained below.

In 12 brief, sharply written pages it brings you the FACTS and KNOWLEDGE you need to deal with in today's ventilation problems. And it does it in a *Minimum of time.* M & E EXHAUST FAN CATALOG takes only a few minutes of your reading time for each situation you are confronted with—and gives you more for each minute you use it than any other catalog we know.

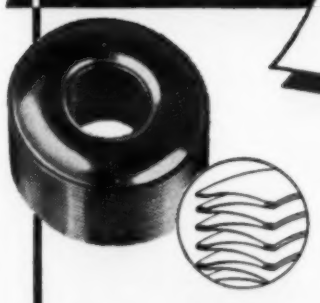
BUT, we don't ask you to take OUR word for it. Although the value of this purchasing catalog would be worth many dollars, we invite you to try out M & E's Exhaust Fan Catalog on a FREE basis. Start using it, and see for yourself what it can do for you.

M & E MANUFACTURING COMPANY
2581 Winthrop Avenue • Indianapolis 5, Indiana

If you write maker identify as **IEN - 10212**

Can You Use
BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties



- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets — in a wide range of sizes and specifications — may prove the ideal solution.

WRITE TODAY for complete information, outlining your specific problem or interest.

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.
ANOTHER BREEZE MARK PRODUCT

If you write maker identify as IEN - 10213

For Production Line Applications and General Lifting

Capacities: ¼ to 2 tons

● Plug in on 110 single phase or 220—440 volt power lines. Fast. Safe. Herc-Alloy flexible welded load chain. Lifetime lubrication. COMET hoists save energy... reduce materials handling costs. Anyone can operate.

COMET CATALOG No. 150—18 pages of illustrated information sent on request or ask your CM Distributor.

CM HOISTS AND CHAIN

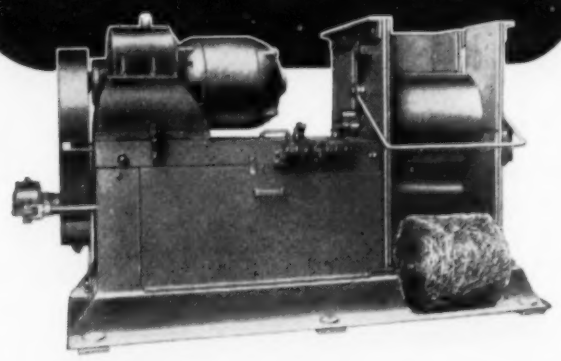
CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

If you write maker identify as IEN - 10214

NOW! Bundle Scrap into 18" and 24" Diameter Bundles

EASY TO HANDLE, SHIP, REMELT OR STORE... with the

McLanahan SCRAP BUNDLER



Designed for efficient bundling of scrap wire and strip metals, anything of a stringy nature, the new McLanahan Scrap Bundler "wraps" scrap into compact cylinders for easy handling. Fast and economical in operation, this new machine is the answer to your scrap bundling problems.

Write for new "Scrap Bundler" Bulletin Today!

McLANAHAN and STONE Corp.
Hollidaysburg, Pa. SINCE 1835

If you write maker identify as IEN - 10216

CLEANING .. Vacuum machine for wet or dry pickup, draws 74 cfm.

Source: PREMIER COMPANY
753-57 Woodlawn Ave., St. Paul 1, Minn.

Attachments to order

Model P-909 is a new heavy-duty portable vacuum machine for industrial and commercial floor cleaning in either wet or dry pickup. Dry tank capacity is 1¾ pecks. Liquid capacity is 3¾ gallons. The suction blower is driven by a universal 110-volt ball bearing motor. It is sealed against water damage. Mounting is on four rubber tread swivel casters. A rubber bumper surrounds the housing. Dimensions are 14½ by 21½ inches. Weight is 32 pounds.

If you write maker identify as IEN - 10217

CLEANING .. Granular detergent for ferrous work to be enameled, plated

Source: OAKITE PRODUCTS INC.
116-A Rector St., New York 6, N. Y.

Technical report B-2414 on request

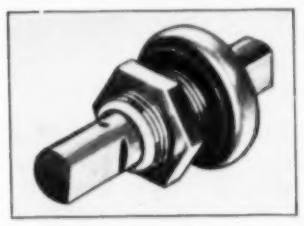
Pigmented compounds employed in metal forming operations, solid-particle dirt and smut, are penetrated quickly by this new No. 26 detergent. They are loosened so a rinsing operation will leave the metal surfaces sufficiently clean for vitreous enameling or plating. The new material will clean engine blocks, remove oil and dirt from iron castings, clean petroleum heat exchanger coils, remove stamping oil and dirt from chromium plated steel, soap film from burnished work, buffing compound prior to electrocleaning.

The compound is supplied as a free flowing granular material for use in hot water to make a dipping solution. It contains surface active agents combined with alkaline and solvent components. Recommended application temperature is 180 to 200 deg. F. with concentration at 4 to 10 oz. per gal. for dipping. It is 200 to 212 deg. F. with 6 to 10-oz. concentration for circulation cleaning.

If you write maker identify as IEN - 10218

DRIVE .. Sealed shaft permits adjustment in sealed interiors

Source: H. H. BUGGIE & CO.
724-28 Stanton St., Toledo 4, Ohio



Negligible friction

Series 1100 is a new assembly of instrument adjusting shaft and a compression seal for rotating adjusting drive to mechanisms sealed in the interiors of instruments that must be protected against corrosion and dirt. The company is prepared to make custom units for specified conditions of pressure, vacuum, waterproofing. It carries three standardized designs in stock.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER .. Descriptions .. Ratings .. See Page 50

If you write maker identify as IEN - 10219

If you write maker identify as IEN - 10220

TO THE INGENIOUS

Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.

Lower cost finishing with quality control for laminated plastic panels . . . because Fullergript made possible a brushing action leading to economies in other processes.

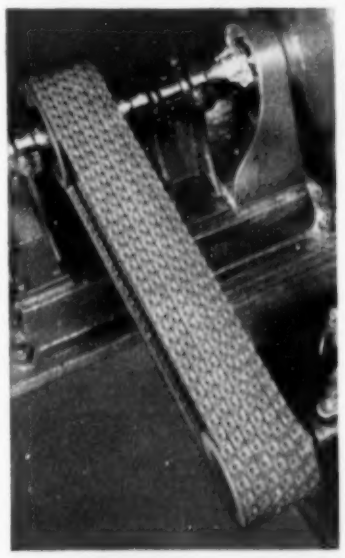
INDUSTRIAL Fuller BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 10221

Test these 3 "E's" of Veelos in your plant



Ease of Installation—the link construction of Veelos makes it easy to install without re-setting the motor or tearing down outboard bearings. Installation time is often cut 50% to 90% over endless v-belts.

Efficiency of Operation—because individual Veelos v-belts can be adjusted for correct tension, matched sets can be kept matched; vibrationless, full power delivery is assured.

Economy of Inventory—just 4 reels of Veelos in the 0, A, B and C widths can replace up to 316 different sizes of endless v-belts. Inventory is simplified, costly belt deterioration is eliminated and you save valuable stockroom storage space.

VEELOS DATA BOOK
Here's the complete story on Veelos, the adjustable v-belt. Write for your copy today!

VEELOS THE LINK V-BELT

MANHEIM MANUFACTURING AND BELTING CO.
651 Manbel Street, Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 10222

Cut Lubrication Time up to 35%

ALEMITE LUBRIKARTS

Speed Plant-Wide Lubrication

An Alemite Lubrikart is a complete lubrication department on wheels. Highly maneuverable—travels 26" aisle—turns in 49" circle. Eliminates waste and contamination, prevents slipshod lubrication. Choice of electric, air or hand operation. Wide choice of equipment makes possible "customized" Lubrikarts to fit specific needs.

- High Pressure Lubrication
- Fills Hydraulic Systems
- Services Oil Reservoirs
- Lubricates Gear Housings
- Refills Oil Cans
- Loads Grease Guns

Send Today for FREE illustrated folders on Alemite Lubrikarts. Write Alemite, Dept. K 93, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE A PRODUCT OF SW STEWART WARNER

If you write maker identify as IEN - 10223

Every roll sealed in cellophane stays factory-fresh. Ask your dealer for this handy package of the tape that goes further, wraps right, lasts longer. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

JENKINS Gold Seal Tape
FRICTION...RUBBER
MADE BY JENKINS BROS MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN - 10224

for ruggedness and simplicity, long life and low maintenance. A real material handling cost saver. Available in various suspensions and speeds; in capacities 1000 to 6000 lbs.

Ask for Bulletin 668

DETROIT HOIST & MACHINE CO.
48th year—Designers & Manufacturers of Hoists and Cranes
8249 Morrow St. • Detroit 11, Mich.

If you write maker identify as IEN - 10225

CAN BE MADE PORTABLE IF DESIRED

THE NEW A-B-C Junior CASE SEALER

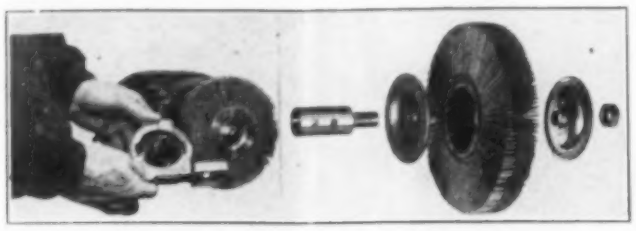
The A-B-C Junior Case Sealer automatically seals corrugated shipping containers in only a fraction of the floor space ordinarily required. Operation is fast—trouble free—economical. A completely new flight chain construction virtually eliminates carton jamming . . . Three semi-automatic models are available to fit most case sizes. Write today for details and floor plans.

A-B-C PACKAGING MACHINE CORP.
QUINCY, ILLINOIS

If you write maker identify as IEN - 10226

GRINDING . . Abrasive cloth wheel mounts radial leaves on hard core

Source: MERIT PRODUCTS INC.
4021-25 Irving Place, Culver City, Calif.



For light grinding and metal finishing

Illustrated is new design in the company's line of Grind-O-Flex wheels initially developed for sanding operations and previously described IEN-1017-52. The new wheel differs from the original design in that its individual radial leaves are permanently sealed to a hard core. It presents a continuous abrasive surface to work pressed into it.

A mounting arbor is provided to attach the wheel to a standard plan or threaded shaft or to hold it in a ¼ or ½-in. chuck. The flanges are held in place by a nut. Arbor and flanges can be reused repeatedly since only the wheel needs replacement. Standard diameter is 6½ inches. Width is 1 inch. Grit ranges from coarse to fine. Weight is 8 ounces.

If you write maker identify as IEN - 10227

TRUCK . . Pan type dump unit and trailer with duplicate bodies

Source: EASTON CAR & CONSTRUCTION CO.
Holly & Liberty Sts., Easton, Pa.

Increases payload, minimizes down time

Capacity is 28 ton overall for this new combination of pan type dump truck and trailer. The truck can be employed alone for hauls where the engine power is not sufficient to take the trailer also. The trailer can be added where conditions are favorable. The trailer is coupled by a semi-automatic pintle hook attached to the sub-frame of the truck. The bodies are dumped by electric upending equipment located at a fixed discharge location.

If you write maker identify as IEN - 10228

Safety device is offered for men who climb ladders and who work on suspended scaffolds. It rides a vertical tube that attaches to the ladder or it slides on the lifeline rope on a scaffold. In either case it grips instantly to prevent falling when downward pull is applied against the worker's safety belt. Safety Tower Ladder Co., 1022-26 Burbank Blvd., Burbank, Calif., is the manufacturer.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10229

If you write maker identify as IEN - 10230

SEND FOR FREE COPY TODAY!

GET THIS IMPORTANT FORK LIFT DATA NOW!

Here's the story of the amazing, new BUDA Fork Lift Truck! It out-maneuvers, out-lasts any other truck! It does the biggest jobs fastest! Strip it for maintenance in 22 seconds; disassemble in 22 minutes; change clutch in 30 minutes! See how and why in new 36-page booklet. Write to:

The Buda Company
Harvey, Illinois

BUDA

If you write maker identify as IEN - 10231

Speed-Up SCREW-SHOOTING and NUT-RUNNING

with these proven Milwaukee TOOLS

Model 624

Screw-Driver and Nut-Runner, Positive Type Clutch. AC or DC, 500 RPM. Handles Nos. 10 to 16 wood screws. Complete with assorted Bits, Finders, and Socket Driver.

$69.50

(In Circle Above)

Model SDA-1

Screw-Driver Attachment adaptable to MILWAUKEE Electric Drills S-412 and S-512 . . . $29.50.

As a Nut-Runner, Model 624 handles Bolts and Nuts from No. 10 to ⅜"

Model 615 SCREW-SHOOTER and NUT-RUNNER

$69.50

Exclusive, patented, adjustable Torque Release Clutch for any desired tension. Capacity: Wood Screws No. 4 to 12; Bolts and Nuts No. 4 to ¼". 600 or 1000 RPM; AC or DC.

Write us for FREE Folder SD-2

MILWAUKEE Screw-Shooters and Nut-Runners are used extensively in automotive, aircraft, refrigeration, radio, television and many other industries. Complete specifications for all Models, including Model SDA-1 Hevi-Duty Screw-Driver attachment for Electric Drills will be sent you promptly.

MILWAUKEE ELECTRIC TOOL CORP.
5360 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

If you write maker identify as IEN - 10233

VARGLAS permafil SLEEVING

Shortly after our first announcement of Varglas Permafil Tubing, engineers began praising its many features — especially its extra flexibility and toughness.

Now, for the first time, Varglas Permafil Sleeving is available in N.E.M.A. grades C-2 and C-1. This new sleeving is lighter coated than the Permafil Tubing but it frequently does the insulating job where tubing was formerly used — and, of course, the cost is much less. Available in coils. Write for free test samples and prices.

VARFLEX CORPORATION
306 Jay St. Rome, N.Y.

If you write maker identify as IEN - 10234

Overhead work's a SNAP! with the NEW Ladscaf SCAFFOLDING

No Bolting with Ladscaf 'LOCK-ON' CLAMPS

It's a snap to erect Ladscaf with these new positive-action clamps. Will not disengage until trigger is released.

UP FASTER

Quickly clamps together to build *better* scaffold *faster*. Ladder rungs are spaced just a foot apart.

SWIVEL ACTION

Stabilizers swivel back to move scaffold easily thru narrow aisles.

UP STAIRS

Ladscaf 'climbs' stairs easily —reduces blocking to a minimum. 2-foot wide panels permit convenient passage around scaffold.

Write for informative, New Ladscaf Bulletin 1E9.

IT'S A SNAP TO SAVE

Call on Universal's layout and planning service to help you

on all Maintenance Painting and Decorating Problems

UNIVERSAL SCAFFOLDING

Ladscaf low-cost, welded steel ladder panels, eliminate bolting—are quickly erected with exclusive snap-on' clamps. Easily fits in confined areas—can be rolled on casters—and extended to straddle machinery.

Combine New Ladscaf with famous Universal Ezebilt steel-panels and Endlok pipe-and-clamp for difficult and unusual scaffolding jobs.

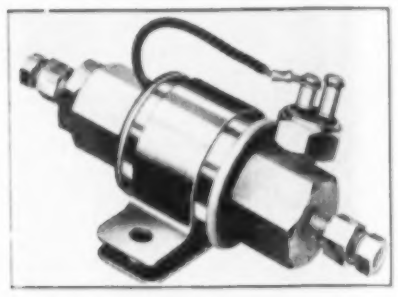
UNIVERSAL MANUFACTURING CORP. ZELIENOPLE, PA.

Distributors offer fast help and service. Consult your classified phone directory.

If you write maker identify as IEN - 10236

VALVE . . Solenoid operated, locks fluid to hold a hydraulic brake

Source: MINNESOTA AUTOMOTIVE INC. 1103 N. Front St., Mankato, Minn.



Holds the brakes

Brake-Lock trade names a new pressure actuated solenoid operated valve for application in the hydraulic lines to one or more brakes on an industrial truck or vehicle. The unit connects electrically into the battery circuit. Hydraulic pressure from brake pedal operation passes through it from line connection.

A selector switch mounts on the vehicle dashboard to make the new valve active or inactive. In the latter position it permits free flow of the pressure fluid for normal brake application and release.

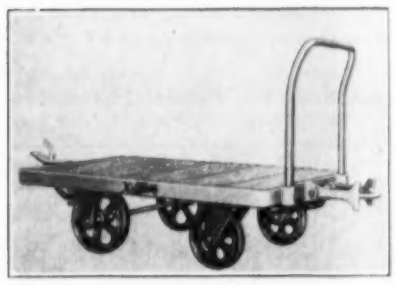
Closing the circuit and applying the brake builds up pressure in a switch that forms part of the assembly. This closes the switch circuit and energizes the solenoid that surrounds the central valve stem. The solenoid moves the valve to closed position where it acts as a check to hold pressure on the brake side of the valve and so keep the brake set. As soon as the operator releases pressure on the pedal the switch opens and the solenoid is de-energized but the valve remains closed.

The brake is released when the operator again presses the pedal, turns the control switch to "off" position and then releases the pedal. This action equalizes pressure on the pedal and brake sides of the valve and, since there is no current in the solenoid, it makes no attempt to reclose against the action of a spring that holds the valve open until its action is again required.

If you write maker identify as IEN - 10237

TRUCK . . Four wheel platform unit mounts couplers for trailer service

Source: NUTTING TRUCK & CASTER CO. 2010 W. Division St., Faribault, Minn.



Several make a train

Loads to 1½ ton can be carried on this new No. 650 truck. It measures 30 and 36 by 60 in. and 36 by 72 in. in three sizes. All have 12-in. main wheels, 10-in. caster wheels mounted on roller bearings. The wheels carry demountable solid rubber tires. The caster swivels are double race ball bearing design. Bolted assembly assists in maintenance.

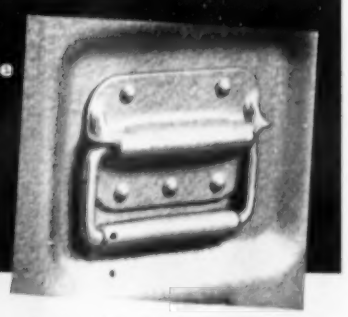
Platform height is 14 inches. It is made of a structural steel frame with rounded corners and is filled with hardwood. Steel angles add reinforcement. A bar handle is included. Slatted racks can be specified at the sides and ends. The automatic couplers engage when they are brought together. They will not come apart when riding over a rough floor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10238

Best handle . . . by far!

- Rugged • No Rattle • Rust-proof
- Built to Military Specifications



Attention manufacturers of portable equipment, carrying cases, parts boxes, etc.! If your product requires side-carry handles, install the best—the Bendix-Friez handle. This superior handle was developed to meet strict military requirements for many specialized equipment uses. Ruggedly built of aluminum and stainless steel in a sturdy design, it knows no equal for long, faithful service. Can be riveted or welded to any kind of container . . . or depressed in the surface, if desired. Unique "snap-back" feature stops rattle from shock and vibration. Prompt attention to both large and small lot orders. Try us today.

Bendix-Friez

FOR FULL DETAILS, WRITE:

FRIEZ INSTRUMENT DIVISION OF Bendix
1328 Taylor Avenue, Baltimore 4, Maryland

Export Sales: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 10239

. . . to help you find the right packing in a hurry

Why take chances with "any old packing" and run the risk of shutdowns and the expense of frequent replacements?

This handy new "packing selector" tells you at a glance the *right* Johns-Manville packing or gasket for practically any power plant application. Its recommendations are based on the experience of J-M engineers in solving packing problems and lowering packing costs in thousands of plants.

For your free copy, write Johns-Manville, Box 60, New York 16, N. Y. Ask for "Packings for the Power Plant."

Johns-Manville PACKINGS & GASKETS

If you write maker identify as IEN - 10240

TOUGH GUY...

With Accurate Control

Masoneilan Air Reducing Valve

This accurate reducing valve is built to take it. Compact. Easy to service. Has large capacity . . . instant response. Its sturdy dependability and simple construction reduces maintenance to a minimum.

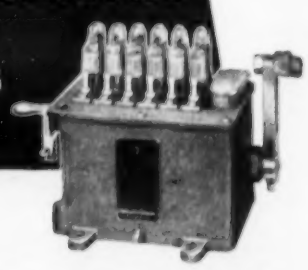
Initial pressure up to 250 lbs. reduced to any pressure from 5 - 60 lbs., 60 - 100 lbs. Sizes ¼" to ½". Pressure gauge included.

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 ADAMS ST., BOSTON 24, MASS., U. S. A.

If you write maker identify as IEN - 10241

For Positive Automatic Machine Lubrication use HILLS-McCANNA FORCE FEED LUBRICATORS



● Hills-McCanna Force Feed Lubricators are specially designed oil line pumps that provide a positive automatic flow of oil to even the most difficult-to-lubricate spots. Available in open or enclosed types in sizes from 2 to 32 pints with 1 to 48 feeds. Oil flow through the lubricator is exactly controllable to meet your specifications. For complete information, write for catalog L-52. Hills-McCanna Co.— 2347 W. Nelson St., Chicago 18, Ill.

HILLS-McCANNA
force feed lubricators

Also manufacturers of Saunders patent valves • chemical proportioning pumps • magnesium alloy sand castings.

If you write maker identify as IEN - 10242

For
SWITCHING
HEATING CIRCUITS
CUTTING IN
MOTOR or BLOWER
Robertshaw®
MODEL F-1
2 Circuit Thermostat

AGITATOR AND HEATER

HEATER AND BLOWER

HI-HEAT TO LOW HEAT

The Model F-1 shown here is a single pole, double throw thermostat used to switch circuits from high to low heat where two heating elements are used. May be used to operate fans in air duct or agitators in tank, etc., when such operations in combination with heaters are desired.

Write for Catalog.

Robertshaw-Fulton CONTROLS COMPANY

ROBERTSHAW THERMOSTAT DIVISION, Youngwood, Pennsylvania

If you write maker identify as IEN - 10243

A WIDE RANGE INDICATING CONTROL

TYPE E8N

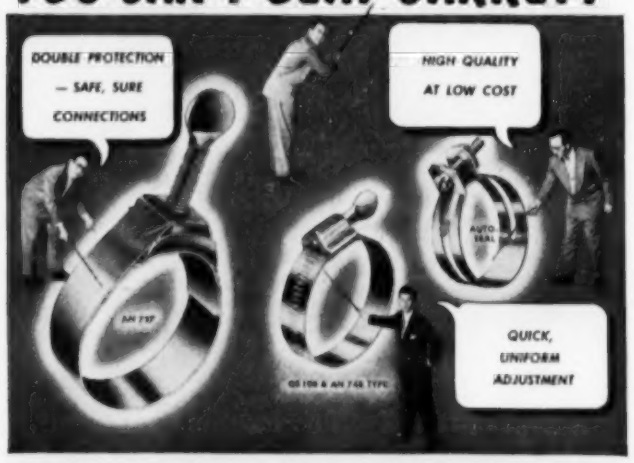
The type E8N indicating control is ideal for installations where an exact temperature reading must be readily available at all times. It is a broad range, precision-built unit that shows the exact temperature of the thermal bulb at all times. The E8N is compensated accurately for wide ambient temperature changes, is simple in design and contains no delicate mechanisms. Various models are available covering ranges of 300° F to 600° F between limits of -150° F to 600° F. On-off differentials available as low as .25° F. Complete details and electrical specifications are contained in bulletin #4-1, write for it today.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 10244

YOU CAN'T BEAT GARRETT



HOSE CLAMPS

OTHER PRODUCTS MANUFACTURED BY GARRETT
SPRING LOCKWASHERS
FLAT WASHERS
STAMPINGS

AN 737 CLAMP—Approved for aircraft use by the Armed Forces. Stainless steel, radial type, with floating bridge and thumb screw adjustment. Mechanically fastened and spot-welded for double protection.

QS 100 & AN 748 TYPE—Worm type, self-locking screw assures uniform, instant adjustment. Plated to prevent corrosion. Used and approved by the Armed Forces.

AUTO-SEAL CLAMP — Screw-type adjustment, scarfed tongue prevents pinching. Staked bolt and captive nut prevents loss of parts. Rustproofed for long service.

PROMPT DELIVERY FROM STOCK

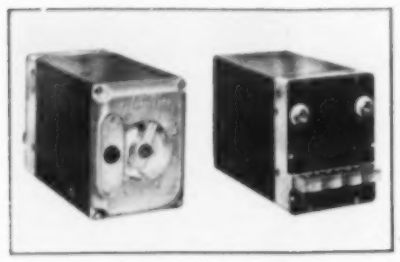
Garrett OF PENNSYLVANIA

GEORGE K. GARRETT COMPANY, INC. PHILA. 34, PA.

If you write maker identify as IEN - 10245

TRANSFORMER . . For spot welding rates 50 kva., 50 per cent duty cycle

Source: KIRKHOF MFG. CORP.
Oakes & Sheldon, Grand Rapids 2, Mich.



Details on request

Type R designates a new 50-kva. welding transformer, particularly for use in special high production multi-spot resistance welding equipment. It meets specifications for Type "A-1" welding press transformers by JIC and RWMA. It is available for 220 or 440-volt 60-cycle service.

It employs a Type-C silicon iron core, is water cooled design and is provided with four-step regulation for a secondary range of 3.2 to 5 volts. Overall dimensions are 15⅝ by 7¼ by 9¼ inches. Weight is 137 pounds.

If you write maker identify as IEN - 10246

LUBRICATING . . Hypodermic oiler designed for precise oil dispensing

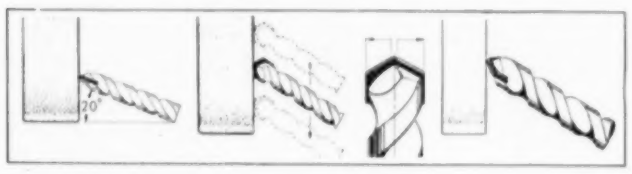
Source: GAUNT INDUSTRIES
825-29 Irving Park Road, Chicago 13, Ill.

Visible supply

Two new oilers have been added to the company's Hypo line, previously described IEN-12695-52. Both employ transparent flexible polyethylene, squeeze-type, 2-oz. bottles. One is fitted with a needle nozzle measuring 0.025 in. in bore diameter. The other measures 0.049 inch. Both needles are 1 in. in length. List prices are $1.25 and $1.30.

If you write maker identify as IEN - 10247

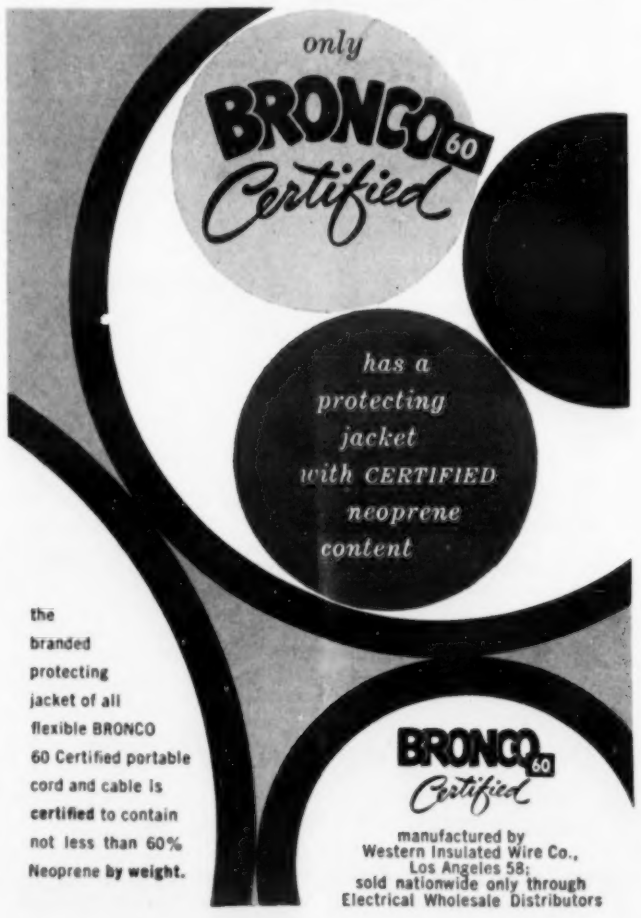
Four steps to correctly sharpen carbide tipped masonry drills are shown in the illustration. Drawings and instructions



have been prepared by Carboloy Department, 11167 E. 8-Mile Road, Detroit 32, Mich. First, bring the drill against the side of the grinding wheel at a 20-degree angle. Second, move it back and forth across the wheel to avoid overheating. Do not drop it into a liquid if it does overheat. Third, keep the two cutting edges equal in length so the point will not be off center to cut an oversize hole. Fourth, grind away the steel behind the tip, when necessary, so it will be $\frac{1}{32}$ in. away from the working surface of the carbide blank.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10248



If you write maker identify as IEN - 10249

For sealed connectors under water

Cannon W Series Connectors operate successfully under water at a depth of 550 feet. Watertight coupling is maintained by special Acme threads on the coupling nuts and shells, and heavy rubber sealing rings. Durable brass shells and overall rugged construction make the W Connectors ideal for heavy duty applications where rough usage is a problem.

W Connectors are available in more than 50 different contact arrangements, with as many as 50 contacts in a single connector. Nominal maximum flashover value 6,500 v; current ratings to 200 a.

it's the W series

CANNON PLUGS

For engineering data, write for W-3 Bulletin. For a general survey of entire Cannon line, request Cannon Plug Guide.

CANNON ELECTRIC
Since 1915

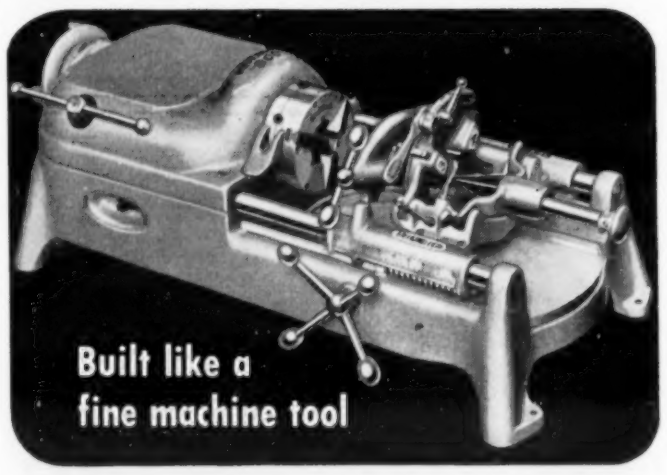
CANNON ELECTRIC COMPANY, LOS ANGELES 31, CALIFORNIA

Factories in Los Angeles, Toronto, New Haven • Representatives in principal cities. Address inquiries to Cannon Electric Company, Dept. I-112, Los Angeles 31, Calif.

If you write maker identify as IEN - 10250

The pipe and bolt threading machine that gives you

Top Performance RIGID "500"



...with exclusive new quick-opening Quadritype Die Head

RIGID engineering does it again! New "500" threads, cuts and reams with the efficiency and speed you've long wanted. Ready for work on any size pipe, ⅛" to 2", in seconds! Independent operation of tools, more than ample power, concealed oil system — a score of other great new features. No wonder its popularity has been immediate and wide-spread. See it, try it at your Supply House — buy the more-for-your-money RIGID "500"!

New Quadritype die head adjusts instantly 1" to 2" regardless of position of lever, without removing dies or head from machine. Same work-saver feature in Dualtype die heads—¼" and ⅜", ½" and ¾". Monotype also available, ⅛" to 2"—also bolt die heads, ¼" to 2".

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 10252

One-piece Lock Nut and Flat Washer

SLASHES FASTENING COSTS

—on sheet metal assemblies—components—parts, etc.

Low-cost, one-piece Washer Type PALNUT Lock Nuts do the job of an ordinary nut, lockwasher and plain washer combined. You save parts and handling operations—get speedy, assembly with hand or power drivers. PALNUT double-locking spring action holds tight under vibration. Built-in washer spans holes and slots. Wide range of standard sizes. Send details of assembly for free samples and literature.

The PALNUT Co.
59 Cordier St., Irvington 11, N. J.
In Canada
P. L. Robertson Mfg. Co., Ltd.
Milton, Ontario

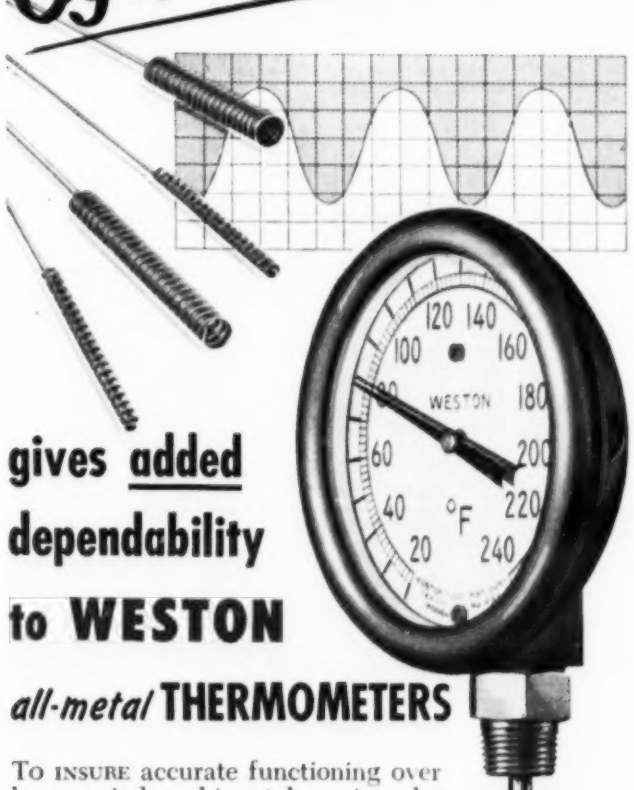
Handle ONE part instead of TWO or THREE

Several types available
In addition to Washer Type "D" shown, there is also "E" type for electrical terminals, switches, strips and studs; radio and TV controls, etc.

WASHER TYPE PALNUT TRADE MARK® **LOCK NUTS**

If you write maker identify as IEN - 10253

Cycle-Seasoning



gives added dependability to WESTON

***all-metal* THERMOMETERS**

To INSURE accurate functioning over long periods, a bi-metal sensing element must necessarily be aged. But there's a big difference in the aging methods employed! Each element in a WESTON Thermometer is first WESTON made . . . then placed in a chamber and subjected to *broad range cycle seasoning* for prolonged periods. When finally placed in a thermometer it is *fit* and *ready* to give the precise measurements . . . the long-term dependability . . . so typical of all instruments bearing the WESTON name. WESTON Thermometers are available in all types, sizes, ranges and stem lengths for all industrial applications. Literature available . . . WESTON Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, New Jersey.

Thermometers with the MULTIPLE HELIX

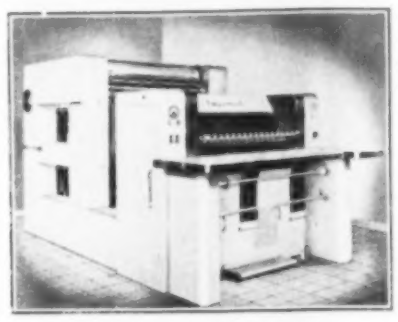
Stocked by leading Distributors

WESTON *Thermometers*

If you write maker identify as IEN - 10255

PRINTING . . Automatic machine for high volume production of blueprints

Source: C. F. PEASE COMPANY
2631 W. Irving Park Road, Chicago 18, Ill.



Synchronized operation

Blueprints, Van Dykes, Blueline prints and, with special equipment, Eastman Autopositives can be produced in volume on continuous rolls at speed to 32 fpm. in this new design of the company's Imperial Synchromatic printing equipment.

Construction employs a revolving printing cylinder, electronic speed control, a horizontal dryer that is gas or electrically heated, variable individual drum heat control, provision for front replacement of the mercury vapor lamp. The machine is available in 42 and 54-in. width capacities.

If you write maker identify as IEN - 10256

PLASTIC . . Flexible sheet and tube for battery separators, service lines

Source: AMERICAN HARD RUBBER CO.
93 Worth St., 10th Floor, New York 13, N. Y.

Also good for bottle filling

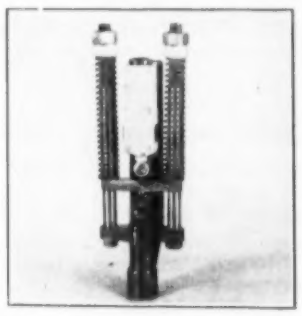
Ace-Flex is a new tough, flexible, light weight plastic that has been added to the line of plastic materials, Tempron, Riviclor, and Dur-Ace, previously described IEN-6493-53. It is resistant to attack by chemicals and has good electrical properties. It is non-toxic and can be steam sterilized.

Tensile strength ranges from 1,900 to 3,000 lb. per square inch. Elongation is 275 to 390 per cent. Dielectric strength is 350 to 400 volts per mil on 60-cycle ac. Water absorption is 0.4 to 1.0 per cent after 48 hr. at room temperature.

If you write maker identify as IEN - 10257

SWITCH . . Pressure operated for a hydraulic line, 250 to 3,000 lb.

Source: BENJAMIN LASSMAN & SON
Highway #8, Glenshaw, Pa.



List price is $72

Two springs oppose a piston mounted in a line fitting in this new pressure operated switch. The switch mechanism, with its roller equipped plunger, is mounted between the springs as shown in the illustration. Pressure can be adjusted by increasing or decreasing spring compression at nuts on the threaded rods. Two sizes are available for pressure ranges between 250 to 1,200 lb. and 1,000 to 3,000 pounds. The switch rates 10 amp. on 110-volt ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10258

Which of these Materials Needs More Efficient Handling in Your Plant?

abrasive solids and chemicals in suspension • acid slurries and sludges • caustic liquors • milk of lime • soda ash • tailings • slag • ore concentrates • residue from filters and classifiers • coal • silt • washery solids • cement and glass sand slurries

Delivered 'round-the-clock (with fewer breakdowns) by

***MORRIS* TYPE R SLURRY PUMP**

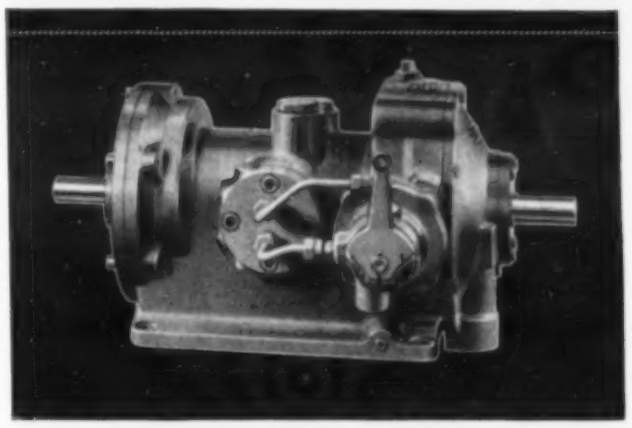
Longer uninterrupted service because:
- No internal studs to cause leakage
- Low pressure stuffing box practically eliminates packing troubles
- Impeller and liner removed without disturbing piping
- Moving parts available in various corrosion/abrasion-resistant alloys

Specifications and operation data on request. No cost — no obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Representatives in Principal Cities

MORRIS *Centrifugal Pumps*

If you write maker identify as IEN - 10259



ANY-SPEED OILGEAR FLUID POWER TRANSMISSION Solves drive problems —Improves machine performance

Even machines that lead their fields have benefited greatly by a change to the *ANY-SPEED* Oilgear Fluid Power Transmission . . . simply because top machine performance often depends on a speed flexibility other drives just don't have. The *Any-Speed* Oilgear is *just that*—from zero to 1600 r.p.m. And once you pick your best speed it stays there . . . or until you want to change. Smooth shading of speed all the way up or down. Full control manually, hydro-electrically, pushbutton or automatic remote. Small, durable, dependable, this "power package" installs easily, ends drive trouble, saves power, cuts maintenance to a sliver. Simple, accessible design. Drives off any constant speed source. Write for descriptive Bulletin 67110A. THE OILGEAR COMPANY, 1567 West Pierce St., Milwaukee 4, Wis

If you write maker identify as IEN - 10260

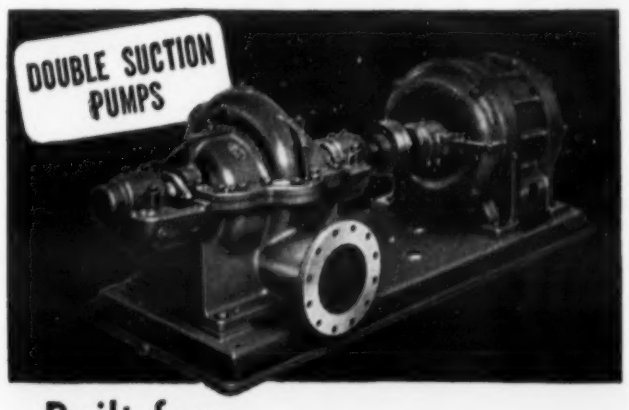
"Maverick" usually spells trouble, to the production line as well as the open range. An unknown quantity, its performance and quality are questionable. For all solder products, there's never any doubt when you choose Kester . . . the one "brand" that's always consistent, always dependable.

YOUR FREE COPY *of the Kester Technical Manual, "SOLDER and Soldering Technique," is waiting for a letter or a card. Won't you WRITE TODAY?*

KESTER

SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 10261



Built for LOW MAINTENANCE

Generous construction with extra metal thicknesses, extra strong parts, extra construction features and extra careful workmanship means lower pumping costs for you. Every pump tested on most modern equipment in industry. Each installation individually engineered.

Horizontally split casing, ball bearings, balanced impeller, wearing rings, hand finished water passages, cast shaft sleeves, generous stuffing box length. Choice of iron, bronze, stainless steel.

Standard sizes from 10 to 7000 gpm with 475 foot head. Larger sizes available. For complete information, call your Allis-Chalmers Office, or write Allis-Chalmers, Milwaukee 1, Wisconsin for bulletin 08B6146.

A-3320

ALLIS-CHALMERS AC

If you write maker identify as IEN - 10262

4 WAY MIXING ACTION PRODUCES HOMOGENEOUS BLENDS... Reduces Mixing Costs —

with the

STURTEVANT BLENDER

Four separate mixing actions in the Sturtevant Blender assure complete blending of various materials regardless of weights, densities, finenesses, or other physical properties.

This mixing action provides a thoroughly blended product with no substances floating to remain unmixed.

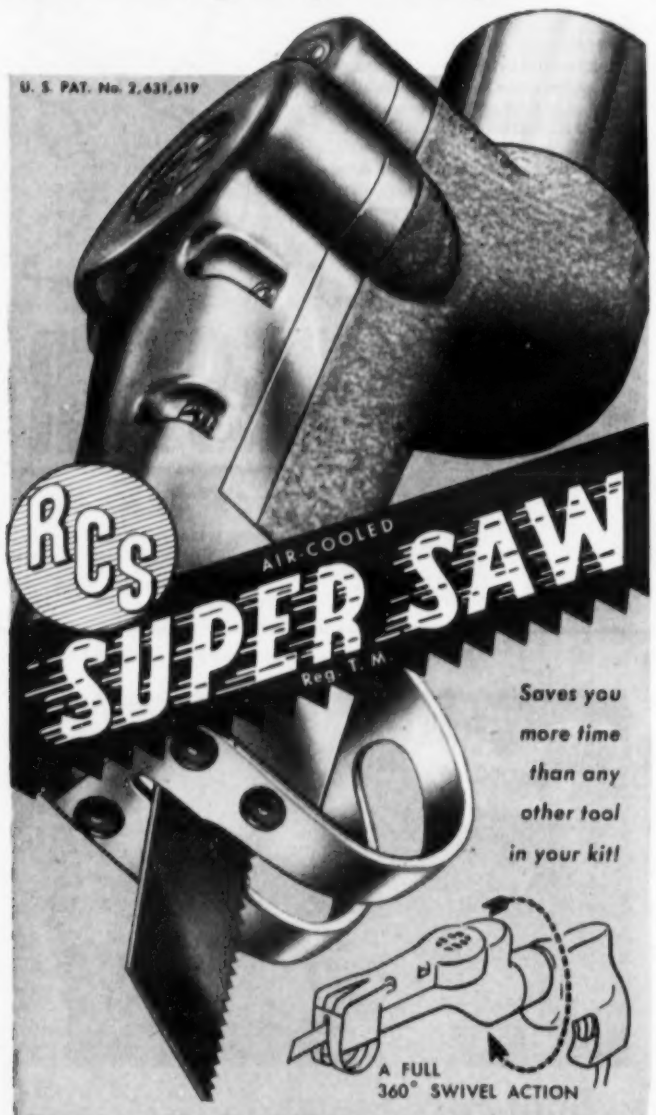
Sturtevant Blenders are available in mixing capacities from 500 to 20,000 pounds. Write for information or engineering assistance.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 22, MASSACHUSETTS
Designers and Manufacturers of
CRUSHERS • GRINDERS • SEPARATORS • CONVEYORS • MECHANICAL DENS and EXCAVATORS • ELEVATORS • MIXERS

If you write maker identify as IEN - 10263

Rugged!

4 YEARS of HEAVY-DUTY USE *and still going strong . . . . .*



A "lifetime" tool with built-in blower, ball and roller bearings, sealed lubrication, etc. Safe—(two-handed operation required). 360° swivel action for maximum versatility. Blades to cut everything including stainless steel. Fits your present ¼" heavy-duty drill.

RCS TOOL SALES CORPORATION
JOLIET, ILLINOIS

Gentlemen:
Please send us Bulletin H-9 and the name of the nearest Super-Saw distributor.

Name _____

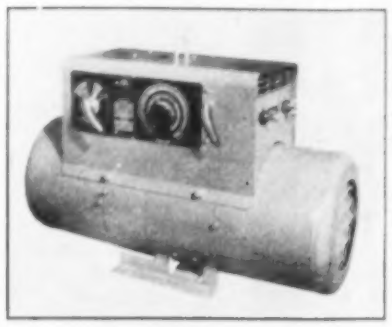
Address _____

City _____ Zone _____ State _____

If you write maker identify as IEN - 10265

WELDING . . DC arc machine in 200, 300 and 400 amp, ratings

Source: METAL & THERMIT CORP.
100 E. 42nd St., 17th Floor, New York 17, N. Y.



Simplified control

New design, employing an electrode size selector and a dial to set minor current adjustments characterizes this new dc. arc machine, previously described IEN-11959-48. The selector is turned to the size indication for the electrode to be used. Then the calibrated current dial is turned to obtain the correct heat. A reversing switch provides a means for quick change of polarity.

The motor is equipped with a magnetic contactor operated by a push button on the control box. This control employs two automatic reset relays to protect against severe and continuous overloads and low line voltage. Welding leads connect at one end of the housing mounted on the motor generator frame.

If you write maker identify as IEN - 10266

GAGE . . Direct reading manometer, extruded body, white plastic scale

Source: BACHARACH INDUSTRIAL INSTRUMENT CO.
7303 Penn Ave., Pittsburgh 8, Pa.

Leaflet 830

The plastic scale, on this new Type-830 manometer, slides between transparent extruded plastic tube legs carrying a blue indicating fluid with 1.9 specific gravity. The fluid is non-freezing at low temperatures. It permits direct pressure readings to 0.10 in. of water over the scale range.

The reading is direct when the scale is moved so the zero point matches the fluid level in the pressure leg. A 4-ft. hose and connection fitting are standard equipment. The hose can be reeled on the instrument when it is not in use. Two ranges are 0 to 7 in. and 0 to 15 in. of water, the latter reversible to read 0 to 8.5 oz. per square inch on the back face.

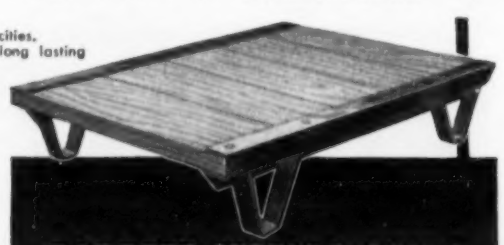
If you write maker identify as IEN - 10267

Go to A. O. Smith Corporation, P.O. Box 584-A, Milwaukee 1, Wis., if you want a glass lined smoke stack. You can purchase it in specified size and height in steel with an acid resistant glass lining inside and out. This lining will combat normal corrosion of steel caused by acid condensate in the smoke. An experimental stack is in service now. It is a three-ton section, 44 feet in height and 6 feet in diameter. It forms the top section of an 85 foot power house stack at the company's Milwaukee plant. The glass was bonded to the steel at 1,600 degrees F.

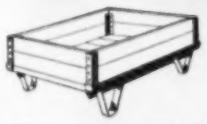
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10268

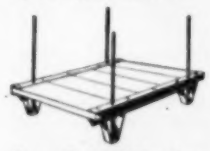
5 capacities.
Husky, rigid, long lasting



BARRETT STEELEG SKIDS
Platform • Box • Stake Types
BUILT TO LAST



Barrett Box-Top Skid for bulk loading. Can be nested. Various heights. Special types available.



Barrett Stake Skid for pipe, lumber, steel bar stock. Stakes removable.

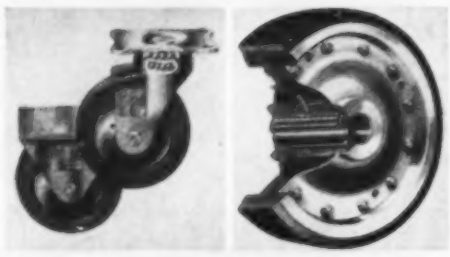
Barrett Skids are built to take heavy, slam-bang abuse year after year. High carbon manganese steel angles (50% stronger than mild steel) prevent deflection . . . no sagging skids to hamper lift-truck operations. Iron-bound hardwood top boards. All parts easily replaceable. Forged steel legs. Broad bearing surface protects floors. Any size, any capacity for hand or electric lift-truck operation. *For complete details get Bulletin 4882.*

BARRETT-CRAVENS COMPANY
4641 S. Western Blvd., Chicago 9, Ill.
Representatives in All Principal Cities.
Canadian Licensee: S. A. Armstrong, Ltd., Toronto, Can.

BARRETT

One man does more than 3 or 4...with a Barrett

If you write maker identify as IEN - 10269



DARNELL

Casters & Wheels

Always SWIVEL and ROLL

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 10270

The Simplest Way to

SOLVE SCALE PROBLEMS

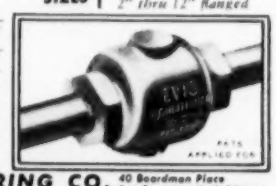
"Bet bet ya!"

Proven Uses Include
ALL PIPING SYSTEMS
CONDENSERS (most types)
COOLING TOWERS
ENGINES & COMPRESSORS
CUBE & FLAKE ICE MAKERS
BOILERS (to 175 wp)
and many others

EVIS Water Conditioners are helping industry conquer its costly scale problems. Plant equipment is made to operate at higher efficiency. Maintenance costs are profitably lowered and shut-downs for periodic clean-ups are often entirely eliminated. The EVIS units are Specially Processed to impart a continuous catalytic action on water-solids flowing through it. This action alters physical behavior sufficiently to inhibit most scale formations. Many thousands of EVIS Water Conditioners are now in service.

Write for further information or ask your Plumbing Supply, Air-Conditioning Refrigeration or Industrial Equipment Jobber.

SIZES | ⅝" thru 2" screwed; 2½" thru 12" flanged



EVIS IS NOT A SOFTENER

Flow Line Type Available for Deep Well Pumps

SOLD ON 90-DAY MONEY-BACK GUARANTEE

EVIS MANUFACTURING CO. 40 Boardman Place, San Francisco 3, California

FRANCHISED REGIONAL DISTRIBUTORS

WHITTIER (Calif.) KEN-EVIS COMPANY, 11749 E. Whittier, OX 9-2211
SAN BERNARDINO (Calif.) KNUPPE & WRIGHT, 220 E. 46th St., SB 8-7818
SAN FRANCISCO NORTH EVIS AGENCY, 74 Dorman Ave., MI 7-1822
RENO WATER CONDITIONED SALES CORP., Western Amer. Life Bldg., 2-3619
SEATTLE EVIS-NORTHWEST, 2417 E. Marginal Way, EL 6116
CHICAGO EVIS-GREAT LAKES COMPANY, 205 N. Wabash Ave., ST 2-5948
OMAHA EVIS-MIDWEST, INC., 1504 Dodge St., JA 7044
DALLAS EVIS-SOUTHWEST CO., 2457 Cherry Chase, EM 0137
ATLANTA EVIS-SOUTHEAST CO., 733 Spring St., N.W., VE 0241
PHILADELPHIA EVIS-MIDEAST CO., 4 E. Richmond St., NE 4-0855
ALBANY (New York) EVIS-NORTHEAST CO., 37 Ripple Dr., GIN 9-7921
EXCLUSIVE MARINE DIST. MORAN-EVIS CO., SAN FRANCISCO, 420 Market St., DO 2-4165

If you write maker identify as IEN - 10271

FAST... EFFICIENT materials-handling with Colson® casters

There's a COLSON Caster designed to meet every industrial materials-handling requirement—*exactly.* Old, bumpy hard-to-handle equipment can be restored to its original efficiency quickly and economically with COLSON Casters. Other COLSON materials-handling equipment includes hand trucks, barrel and drum trucks, platform trucks and lift-jack systems. Write us or consult the yellow pages (under "Casters" or "Trucks, industrial") for the COLSON office near you.

Model 3-427-45 for medium weight industrial equipment.
Model 5-807-15 for heavy duty industrial work, capacity 800 lbs. per caster.
Model 6-807-65 made of heavy duty steel for extra heavy service, practically indestructible.

Write for new catalog "COLSON Trucks and Casters"

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS · LIFT-JACK SYSTEMS · INDUSTRIAL TRUCKS

If you write maker identify as IEN - 10272

ONLY SAFETY BELT HOOKS

have the patented binder bars — are rigidly mounted in double steel strips that hold hooks permanently in alignment, assuring uniform tension across the belt, maximum traction and long belt life. Moreover, these bars protect belts—lap over belt ends, prevent fraying, prevent hooks from pulling out. This better belt lacing comes in 5 sizes. It can be applied with any standard lacer or lacing machine, or, can be applied with an ordinary hammer by using the inexpensive Safety Tu-way Lacer.

Write for Circular

Safety BELT-LACER CO.
5394 N. Menard Ave.
Chicago 30, U. S. A.

If you write maker identify as IEN - 10273

CALCULAGRAPH

figures elapsed time accurately

Reliable job time records are essential for compiling correct cost data, estimating reorders and checking on production efficiency. One sure way to secure accurate to the minute, dependable time costs is to use Calculagraph automatically-figured elapsed time records. Calculagraph gives you total elapsed time, starting and finishing time and date on a permanent, printed reference card. Eliminate losses due to inaccurate job time calculations by using Calculagraph to time your operations.

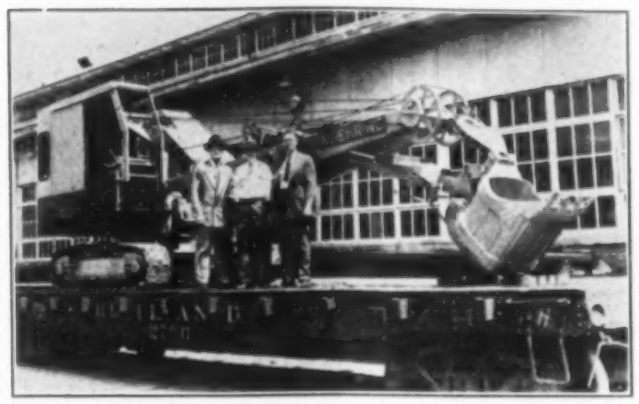
Write for full information today, to Dept. A.

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

If you write maker identify as IEN - 10275

CONSTRUCTION . . Power shovel crawler mounted, rates 10 ton lift

Source: KOEHRING COMPANY
3024-28 W. Concordia Ave., Milwaukee 16, Wis.



Converts for duty as a crane

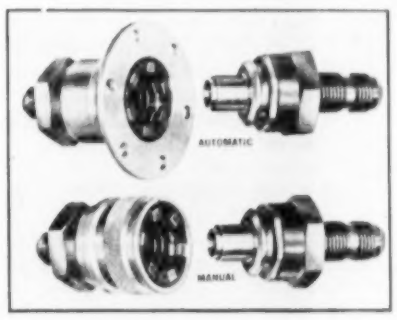
Model 205 is new design in the company's line of power operated excavating equipment. The new unit is fitted with a ½-yd. shovel and is operated by manipulating four levers. The crawler mounting is self-cleaning design with interchangeable shoes in widths measuring 16, 20 and 24 inches. The assembly can be specified with a diesel or gasoline engine or motor drive. It is convertible from a shovel to a hoe, crane, dragline, clamshell, or with attachments for a magnet.

Construction includes self-energizing brakes that require no adjustment for the life of the linings, a steel cab with sliding doors and shatterproof glass windows, leak proof bulk heads to keep the clutches and brakes dry, anti-friction bearings on the levers and linkage, nonmetallic bushings on the individual hook and turntable rollers with eccentric wear adjustment, push button control for the dipper trip.

If you write maker identify as IEN - 10276

PIPE FITTING . . Self-seal coupling closes on quick disconnection

Source: E. B. WIGGINS OIL TOOL CO.
3422 E. Olympic Blvd., Los Angeles 23, Calif.



Features light weight

Inst-O-Matic trade names a new hydraulic quick disconnect coupling. It is for use on mobile equipment and on plant machines to open hydraulic lines without loss of fluid or pressure. Two models include a manual design that can be opened by hand and an automatic design that will open of its own accord when either the internal pressure or the external pull exceeds a predetermined amount.

The socket and nipple can be used with flow in either direction. An O-ring seals the nipple before the internal valves start to open. A flat gasket seals in final position. Standard connections include male or female pipe thread, hose shank and various aircraft designs.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10277

OWN YOUR OWN HEAT-TREATING PLANT

low in cost
high in productivity
compact in design

here it is in a single unit

Features include:

1. *Heating Furnace with range of 1000° to 2400° F. automatically controlled (12" wide x 10" high x 18" deep).*
2. *Tempering or Drawing Oven is recirculating type. Work is constantly bathed with evenly distributed high velocity and held to constant temperature by automatic control. Alloy steel lined with perforated shelf, has range of 250° to 1100° F. (21" wide x 10" high x 18" deep).*
3. *Furnace and Oven doors equipped with foot treadles.*
4. *Two Quench Tanks for oil and water. By means of double wall construction, oil tank is entirely surrounded by water for cooling oil, thus producing more uniform quenching.*
5. *Automatic electronic type controls.*
6. *Shipped ready to install by simply connecting gas and electric power line.*

A complete line of WALTZ standard or special heat-treating furnaces, using all types of fuels are built to suit your requirements. Write Dept. A for comprehensive illustrated bulletins.

Waltz FURNACE COMPANY
SYMMES STREET • CINCINNATI, OHIO

If you write maker identify as IEN - 10278

Complete Portable Steel Strapping Kit

New Acme Steel "Pony Pack" is lightweight, complete with tools for fast, low-cost strapping

Here's a handy, portable strapping outfit for fastening, re-coopering, securing, or reinforcing anything, anytime, anywhere.

It's Acme Steel's new "Pony Pack." Weighs about 20 pounds. Metal carrier contains 300-foot coil of Acme Steel Strapping, a stretching tool, sealing tool, seals and snips. For details, write Acme Steel Products Division, Dept. IEN-93, ACME STEEL COMPANY, 2840 Archer Ave., Chicago 8, Ill.

STRAP IT...STITCH IT...SHIP IT...SAFELY!

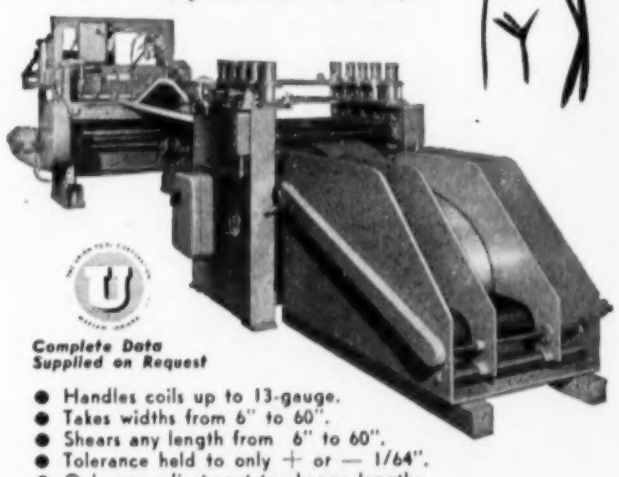
ACME STEEL

If you write maker identify as IEN - 10279

WITH ONLY ONE OPERATOR
***THIS* UNION MACHINE**

- DE-COILS
- LEVELS
- SHEARS
- STACKS

CUTS LABOR COSTS
AUTOMATICALLY
CUTS MATERIAL COSTS
Buy in coils and cut sheet lengths as needed. No delay.



Complete Data Supplied on Request

- Handles coils up to 13-gauge.
- Takes widths from 6" to 60".
- Shears any length from 6" to 60".
- Tolerance held to only + or — 1/64".
- Only one adjustment to change lengths.
- Speeds to 150 l.f.p.m. depending on lengths cut.
- Neatly stacks sheared pieces automatically.
- Will handle steel, aluminum, etc.

UNION TOOL CORP.
320 E. MARKET ST., WARSAW, IND., U. S. A.

USERS SAY UNION CUTS COSTS, SPEEDS PRODUCTION

If you write maker identify as IEN - 10280

for the best in TEFLON* depend on JOHN CRANE

engineering leadership and facilities

**DuPont trade-mark for tetrafluoroethylene resin*

When you use John Crane Teflon products you get *all* the advantages of this remarkable material—because you get the finest in fabrication "know-how" and quality.

"John Crane" fabricates Teflon for countless applications, including rods, tubing, tape, sheets, gaskets, bellows, washers, insulators, electrical parts, valve discs, "C-V" Rings, braided packings, coverings for dough sheeting rolls and heat sealing jaws, and a wide variety of other forms. Our engineers are ready to work with and assist you in your particular needs or problems.

Let us know your requirements. Send for our 12-page illustrated catalog. Crane Packing Co., 1815 Cuyler Ave., Chicago 13, Illinois.

JOHN CRANE — CRANE PACKING COMPANY

If you write maker identify as IEN - 10281

ACE-HIDE

UNBREAKABLE RUBBER-PLASTIC 3-GAL. PAIL

3-GAL. PAIL

1-QUART DIPPER

For handling corrosive solutions. Tough, resilient, practically indestructible. Made of a new synthetic rubber-base material called ACE-HIDE, unaffected by most acids and alkalies. Drip-proof spout pours easily directed stream. Graduated scale inside pail. ORDER NOW from your rubber goods distributor, or write us.

ACE rubber and plastic products

AMERICAN HARD RUBBER COMPANY
93 Worth St., New York 13, N. Y.

If you write maker identify as IEN - 10282

BE RIGHT!

IN ALL YOUR **ABRASION RESISTANCE TESTS**

Model 140 TABER ABRASER

On your job you have to be RIGHT, and here's the instrument that will help you do it. Simulates ACTUAL abrasion and wear conditions during test and gives ACCURATE numerical index for your report. Recognized the world over as the STANDARD for testing plastics, rubber, textiles, paint and linoleum. Send coupon below for free booklet!

SHEAR HARDNESS and DIAMOND SCRATCH TESTER

Tests quality of plastic material and plastic coated surfaces to resist scratches, digs, scrapes and other physical damage not classed as normal wear. Handles specimens from thin plate to ¼" thickness. Used everywhere for precision perfect tests.

The Taber STIFFNESS GAUGE

Determines both INITIAL and NORMAL stiffness of sheet and wire specimens and gives report from DIRECT READING. Precision shear cuts exact specimens from paper or plastic (up to 20 pt.) to eliminate possible variation in results.

Taber INSTRUMENT CORPORATION
SECTION 15
111 Goundry St., North Tonawanda, N. Y.

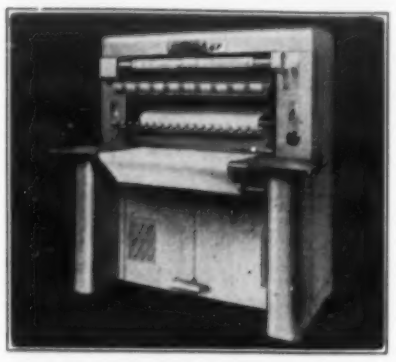
- ☐ Please send me booklet on Taber Abraser
- ☐ Please send me booklet on Taber Hardness and Scratch Tester
- ☐ Please send me booklet on Taber Stiffness Gauge

NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

If you write maker identify as IEN - 10284

PRINTING . . Ammonia type machine exposes and dry develops, to 32 fpm.

Source: C. F. PEASE COMPANY
2631 W. Irving Park Road, Chicago 18, Ill.



Cut sheets or rolls

The Pacemaker, for large volume production of white prints, and the Zephyr, illustrated, for medium volume production, are improved designs in the company's line. The ammonia type equipment prints and develops positive reproductions of engineering drawings, tracings or material typed, written or drawn on translucent paper or cloth. An operator feeds the original copy and sensitized sheet into the machine. From that point on, the printing, separation and developing are automatic. Finished prints are delivered to front or rear receiving trays, dry, flat and ready for use.

Printing employs the high pressure mercury vapor quartz lamp. Drive is at speeds to 32 ft. per minute. The Pacemaker is available in 42 and 54 in. sizes. The Zephyr is made in the one 42-in. size.

If you write maker identify as IEN - 10285

CONTROL . . Position indicator measures, controls mechanical variable

Source: DOELCAM CORPORATION
1402 Soldiers Field Road, Boston 35, Mass.

Ask for Bulletin M

Microsyn is a new small electromechanical signal generator that accurately transforms angular displacement into an electrical signal. It consists of a 4-pole stator and a specially shaped rotor mounted in an aluminum housing. Its balanced bridge construction compensates for error. The unit has been in service in connection with military, nautical and aircraft instruments.

It can measure and control pressure, employing a bourdon tube, a bellows, a mercury or water manometer or a flow meter. It can measure and control temperature in connection with bimetallic elements, filled thermal elements and bourdon tubes. It can be applied for dimensional measurements, density, humidity, viscosity, weight. Overall axial length and diameter are both about 2¼ inches. Weight is 7.3 ounces.

If you write maker identify as IEN - 10286

Solar Aircraft Co., 2200 Pacific Highway, San Diego 12, Calif., has a new coating material for alloy steels to protect the steel against failure at high temperature. Solaramic trade names the coating and the application process. A folder containing samples of coated steel and explanations is available on request.

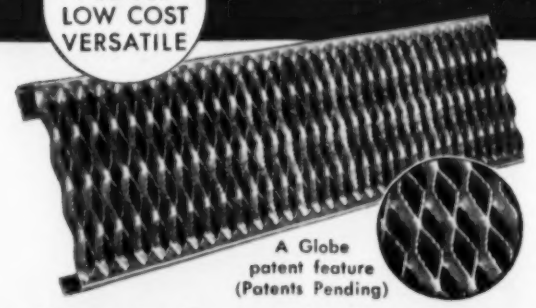
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10287

Safety GRIP-STRUT

gives Maximum Strength with Minimum Weight

NON-SKID RUGGED LOW COST VERSATILE



A Globe patent feature (Patents Pending)

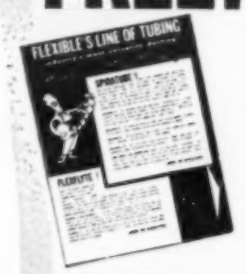
Not welded, not riveted, not expanded, all one piece of material, gives a non-skid surface in *all* directions, a diamond shaped pattern with open space area in excess of 75% of surface, easily cleaned, sanitary. Simple to install, ideal for on-the-job fabricating, replaces existing grating with no supporting structural changes necessary. Strong yet light in weight. Ideal for stair treads, work platforms, catwalks, flooring, running board steps, in fact for any purpose where safe flooring is a factor. Available in steel or aluminum. Write for new catalog, showing new low prices, methods of application, typical installations and list of nationally known users.

Distributors in all principal cities.

GRIP-STRUT division
THE GLOBE COMPANY
Manufacturers since 1914
4010 S. Princeton Ave. • Chicago 9, Ill.

If you write maker identify as IEN - 10288

FREE! Every Maintenance Engineer should have this booklet



Illustrated booklet that deals with your problems . . . how they can be solved quickly and efficiently with this amazing flexible ducting. Ventilation, dust removal, materials handling . . . whatever your requirements, FLEXIBLE's line of tubing will meet them better, cost less. And most important, YOU CAN INSTALL FLEXIBLE'S LINE OF TUBING YOURSELF!

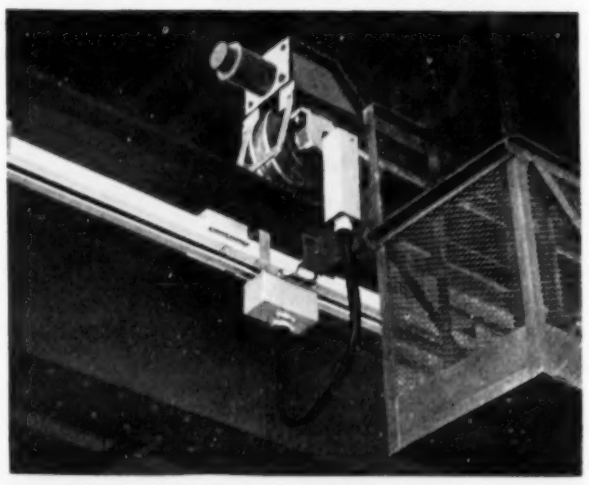
WRITE TODAY!

Flexible Tubing CORPORATION
Guilford, Connecticut — Pasadena 1, California

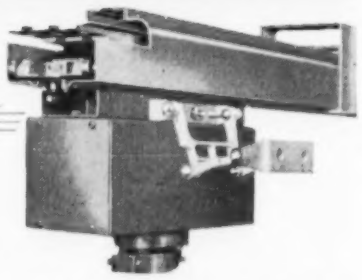
For all ducting systems:
FLEXFLYTE®
SPIRATUBE®
AYRTUBE®

If you write maker identify as IEN - 10289

safe electrification for HEAVY DUTY CRANES and HOISTS



FEEDRAIL Moving POWER SYSTEMS



Why let Crane and Hoist wiring endanger workers or be a potential hazard to your plant? The new Heavy Duty Feedrail trolley busways give you the *safe* way because:

1. **They're a built-for-the-purpose system, designed and constructed *expressly* for high amperages.**
2. **All current carrying conductors and trolley contacts are protected every inch of the way.**

In addition to giving you maximum safety, Heavy Duty Feedrail will readily fit your specific application requirements. Its standardized components—accurately, ruggedly constructed—make for fast, easy installation. And, you'll find that its low maintenance, long life and continuous dependable service are economy factors in plant operation.

Send for Heavy Duty Feedrail descriptive bulletin. Write Dept. N-9

SOLD BY MORE THAN 1,000 ELECTRICAL DISTRIBUTORS FROM COAST TO COAST

53-2A

Never Becomes Obsolete

FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET · NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as **IEN - 10291**

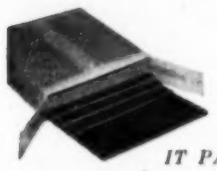
ISOMODE* PADS...

money-saving "shoes" for busy machine feet!

Now you can successfully isolate vibration, muffle plant noise, and cut down maintenance bills by using low-cost Isomode Pads.

Made of DuPont Neoprene, these pads resist oil and water, actually last for years. In thousands of installations, they have already proved their ability to swallow up troublesome machine shock and vibration. Even that of giant punch presses.

Installation is quick, easy. And there's no waste – you use only as much as you need. Simply cut an Isomode Pad to size and install under equipment. Results: Machines stay put without bolting, floors and building remain undamaged, working conditions are improved, and machine maintenance is cut.

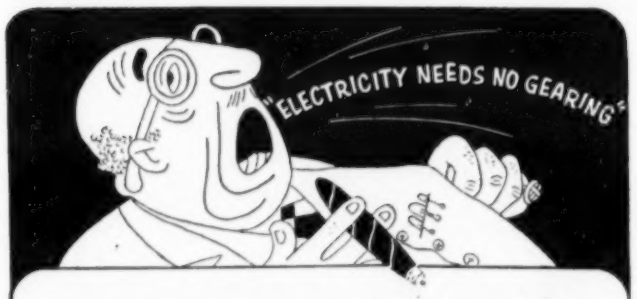


Try a package of Isomode Pads and see. Write for full details and price list. **Trade Mark*

IT PAYS TO KEEP A PACKAGE ON HAND

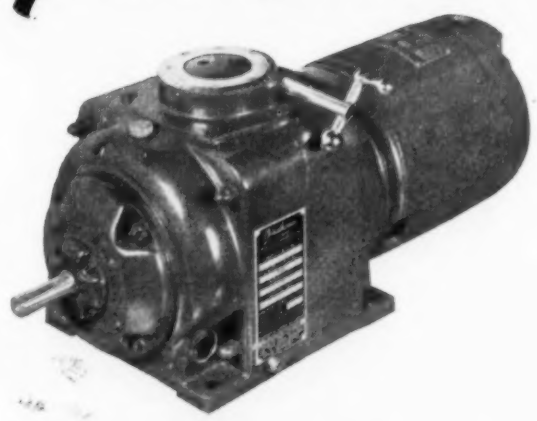
THE MB MANUFACTURING COMPANY, INC
1064 State Street, New Haven 11, Conn.

If you write maker identify as **IEN - 10292**



Don't be misled – use a Mechanical Drive for a Mechanical Job!

GET Graham variable speed drives



- **ULTIMATE in SIMPLICITY and COMPACTNESS**—only the Graham is a straight line extension of a standard induction motor—or available without motor.
- **UNLIMITED SPEED RANGE**—from any desired maximum speed to zero, including reverse if wanted without stopping motor.
- **UNMATCHED ACCURACY**—of speed setting and resetting and speed holding.
- **NO PERISHABLE PARTS**—such as belts or tubes, requiring periodic replacement.
- **PROVED PERFORMANCE**—Fifteen years satisfactory use as standard equipment.
- **LOW COST**—a better job for less money.

Prompt Delivery on Standard Models

GRAHAM TRANSMISSIONS, INC.
Dept. IEN, Menomonee Falls, Wis.

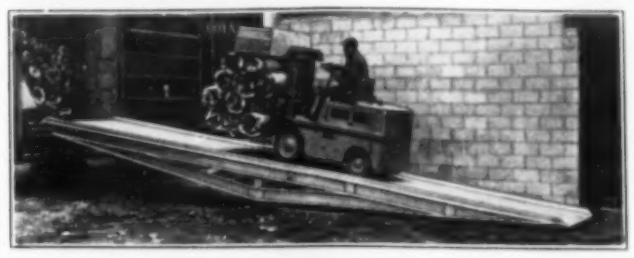
GET Graham *most reliable variable speed drive made*

ENGINEERED and RATED for 'ROUND the CLOCK SERVICE

If you write maker identify as **IEN - 10294**

HANDLING .. Magnesium ramp spans from ground to freight car door

Source: MAGLINE INC.
7930 Mercer St., Pinconning, Mich.



Makes loading dock unnecessary

Length is 30 ft. and width is about 6 ft. for this new magnesium loading ramp. It is designed to support loads to 13,000 lb. and is equipped with a hydraulic lifting mechanism so one end can be raised to the level of a car floor. A retractable trailer hitch permits towing from one location to another. The unit supplements regular loading dock facilities and applies in places where there is no dock.

If you write maker identify as **IEN - 10295**

INSULATING .. Flexible sheet mica can be bent and formed without heating

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

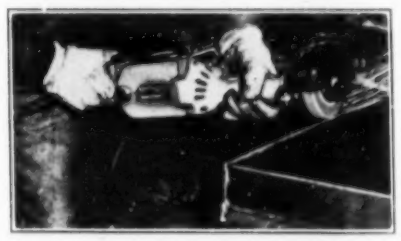
Technical data upon request

Typical applications for the new GE-77520 flexible sheet mica are in armature slots under end windings, at cross-overs and under field coil terminals. Sheets to 10 mils in thickness can be bent over a ½-in. mandrel without chipping. Thicker sheets can be bent over a 1-in. mandrel. The sheet employs a binder content limited to 11 per cent. The binder itself was initially developed as a bonding agent for metal. It will not ooze out when heated under pressure. Dielectric strength is minimum at 350 volts per mil, for sheets to 20 mils. It is 300 volts per mil for thicker sheets.

If you write maker identify as **IEN - 10296**

GRINDING .. Portable tool in three sizes for 4 to 6 in. wheels

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.



For utility use

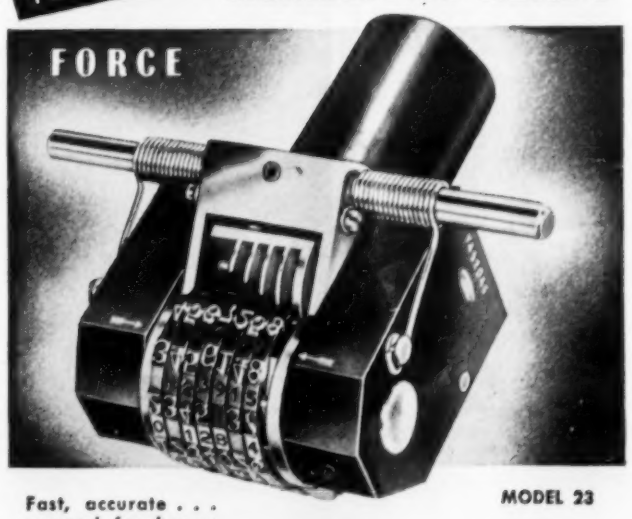
Aerial designates a new portable electric grinding machine with a universal motor for operation on 110 volts. Three sizes take 4, 5 and 6-in. wheels for free speeds at 5,560, 4,430 and 3,730 rpm. Assembly is in an aluminum housing on ball bearings. Commutator and switch are enclosed to keep out dirt. The tool weighs 12 lb., measures 22 in. in length, 4¾ in. in width and 4½ in. in height.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10297**

NUMBERING IN METAL

indenting **NUMBERING HEADS**



Fast, accurate . . . rugged for heavy power press use. Figures from 1/64" to 3/8" or larger as required.

MODEL 23

Write for prices and catalog of all models.

WM. A. FORCE
& COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as **IEN - 10298**

G-E BOXES and COVERS

now available in 170 types

With the recent addition of many new boxes, the G-E line of octagon, square, old-work, Levelock sectional device, and standard bracket boxes and covers now includes more than 170 types. This complete line, including some boxes with and some boxes without cable clamps and plaster-mounting ears, makes it easy to select a box that exactly meets your wiring requirements.

Get full details from your G-E Construction Materials distributor, or write to Section C21-942, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

You can put your confidence in —

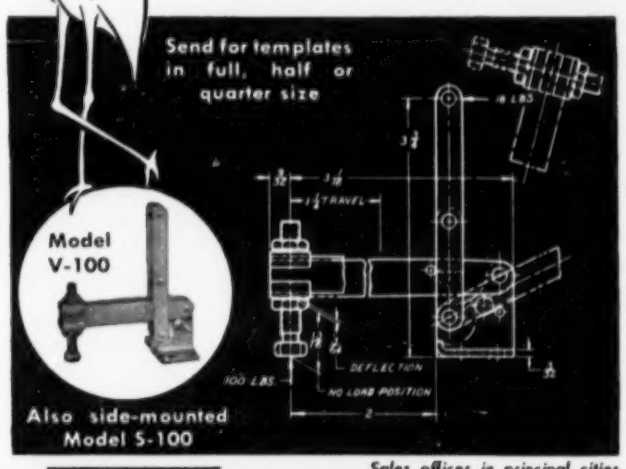
GENERAL ELECTRIC

If you write maker identify as **IEN - 10299**

ANNOUNCING

Our New Baby A MIDGET CLAMP

UNBELIEVABLY STRONG, WITH PERFECT FEATURES
100 lbs. clamping force with spindle at end of toggle bar!



Sales offices in principal cities

KNU-VISE PRODUCTS LAPEER MFG. CO.
3060 DAVISON ROAD • LAPEER, MICHIGAN

WESTERN DIVISION — 422 MAGNOLIA • GLENDALE, CALIF.
CANADIAN DIV. — HIGGINSON ENGR. • HAMILTON, ONT.

If you write maker identify as **IEN - 10300**

SHIPPING COSTS GO DOWN

CORROSION LOSSES STOP

WITH MARVELLUM VPI® WRAP

• Time consuming slushing, expensive wraps and seals, messy and costly cleaning are no longer necessary if you use Marvellum VPI. Developed for Government shipments during the war, VPI is now available to all. It's the ideal wrap for shipping Ferrous metal parts. A special coating on the paper vaporizes and forms an invisible protective film around the item wrapped, preventing corrosion.

It is easy to use — just fold the paper over the part. Tight seals, rust-preventive oils, puncture-proof wrappings or direct contact with the chemical are not necessary. Yet Marvellum VPI protects against rust for years. Open the wrapping and there's the part as bright and clean as when it was made.

Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, coating and producing VPI Wraps. Also makers of a wide range of other Barrier Materials, Government Approved, for product protection.

Write for FREE Booklet and name of nearest distributor.

The Marvellum Company
20 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN - 10301

Your Best Buy in Burs!

S.S.WHITE BURS cut fast, clean and cool and give long-lasting economical service. Cutting edges are keen — and stay sharp. There's a full selection of sizes and shapes of chromed, and carbide burs for cutting brass, steel, wood, hard rubber, bone or any other material that can be bored or milled by sharp-edged hardened steel tools.

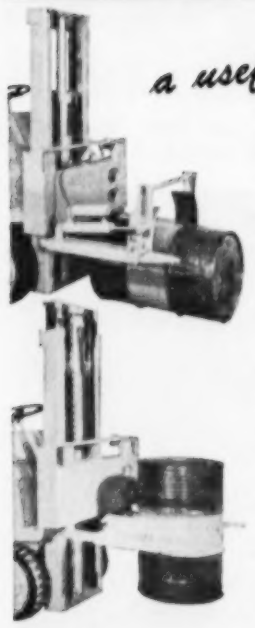
WRITE TODAY for 50-page Catalog T-51

It completely describes the full line of S.S. White flexible shaft tools and other industrial products.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO. Dept. N, 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 10302

NEW! BAKER HYDRAULIC DRUM UP-ENDER



a useful attachment for

BAKER FORK TRUCKS

With this attachment a fork truck can pick up and transport drums or other cylindrical objects either vertically or horizontally and rotate them 90°, for horizontal or vertical stacking. It can also tilt them forward 45° beyond horizontal for emptying at any height within the truck's lifting range. All operations are controlled by the operator from the driver's position. Attachment is quickly demounted by removing two lock pins, disconnecting a "snap-on" hose coupling and sliding the complete assembly off the forks.

For application on Baker 2000, 3000 and 4000 pound capacity fork trucks.

write for Bulletin 1350-4.

Baker industrial trucks

THE BAKER-RAULANG COMPANY
1226 W. 80th STREET • CLEVELAND 2, OHIO
BAKER-LULL Corp., *Subsidiary*, Minneapolis, Minn.
Material Handling and Construction Equipment

If you write maker identify as IEN - 10303

WANTED

Users of round leather belting to try Vulco-Flex V-Belting with this MONEY-BACK Guarantee

No matter what kind of machines you operate...if you are now using round leather belting...test Gates Vulco-Flex V-Belting on one of your machines for 90 days. If you do not save take-up time, end slippage, save replacement time and dollars — the full price you paid for the test drive will be refunded.

You DO NOT change pulleys... Vulco-Flex is as easy to install as round leather belting.

Vulco-Flex has a maximum of 3% stretch...grips pulleys to end all slippage...oil and heat resistant... lasts 4 to 7 times longer than leather belting.

Prove to yourself—with a test drive—how Vulco-Flex will reduce your maintenance—up your production—save you money. Write us on your letterhead to have Gates Field Engineer in your area install test drive. Or simply fill out the coupon below and send it to us.

Gates VULCO-FLEX V-BELTING

Coupon Brings Test Drive

The Gates Rubber Co. Sales Division, Inc.
Denver 17, Colorado

Please have nearby Gates Field Engineer install Vulco-Flex test drive. If we are not satisfied after 90 days, you are to refund price paid for V-Belting.

AC-18

Firm Name_____

Individual_____

Address_____ City & State_____

If you write maker identify as IEN - 10304

FEEDING . . Proportioning pump meters liquid into process lines

Source: WILSON CHEMICAL FEEDERS INC.
206 Clinton St., Buffalo 5, N. Y.

Type LT-MC-W

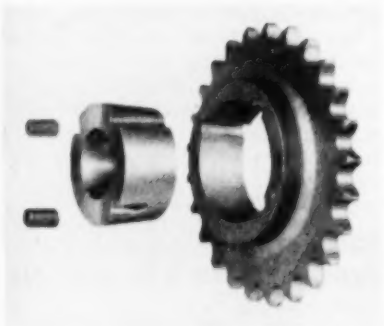
Stroke length is maximum at ⅞ in. and is adjustable in increments of 0.0005 in. while this new proportioning pump is in operation. Stroke can be adjusted down, for minimum delivery of 3 cc., or up for maximum delivery of 6 qt. per hr., based on handling common water-treating chemicals with a 4-ft. suction lift at 50 to 70 deg. F. Standard operating speed is 32 strokes per minute from a 110-volt motor and clutch. It provides for starting under load to 125 pounds.

The pump assembly is made of clear acrylic plastic that is not subject to attack by chemicals. The piston is ground and polished. Teflon piston seals are proof against leakage. The motor and transmission are enclosed and fan ventilated in the formed plastic housing on which the pump is mounted.

If you write maker identify as IEN - 10305

DRIVE . . Roller chain sprockets mount on interchangeable split hubs

Source: LINK-BELT COMPANY
305-9 N. Michigan Ave., Chicago 1, Ill.



Ask for Book 2449

Sprocket wheels, with taper lock bushings for ½, ⅝, ¾, 1 and 1¼ in. pitch single width roller chain, are now available from stock. A given sprocket takes interchangeable bushings to fit shafts of varying diameter. Set screws force the tapered bushing into place and hold it in the sprocket bore and on the shaft. The length of the bushing supports the sprocket on the shaft.

The set screws can be removed and threaded into release holes to pull the bushing out when the sprocket is to be removed or the bore changed. The company has prepared illustrated data with tabulations on sizes, weights, prices.

If you write maker identify as IEN - 10306

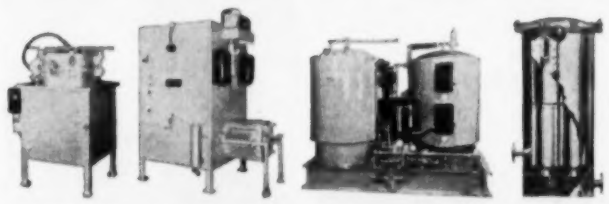
Want really clean glassware in your laboratory? If you do, then Linbro Chemical Co., 679-83 Dixwell Ave., New Haven 11, Conn., suggests its concentrated liquid 7X. It mixes with water prior to use. Glassware dipped into it rinses clean and free from any deposit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10307

HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT

Saves You MONEY, OIL and MACHINERY



OIL RECLAIMER — PURIFIER, RE-REFINER — HIGH CAPACITY RECLAIMER — FILTER

A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL.

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated—must be discarded or conditioned for further use.

There is a HILCO to do This Job for You
Cleans Oil, Reduces Down Time, Increases Production!

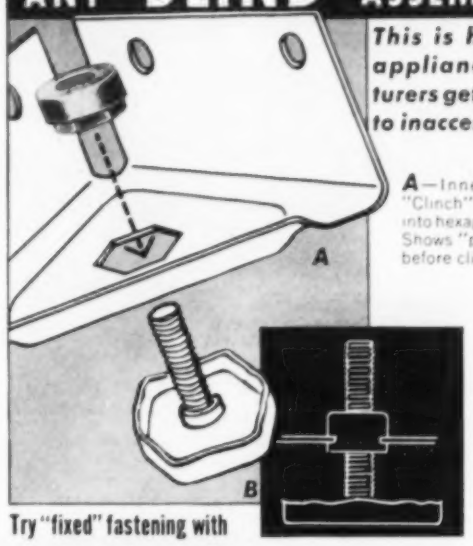
★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and Recommendations.

OIL PURIFIER DIVISION
THE HILLIARD CORPORATION
35 W. 4th ST. • ELMIRA, N. Y.
IN CANADA — Upton - Bradeen - James, Ltd.
990 Bay St., Toronto, 3464 Park Ave., Montreal

If you write maker identify as IEN - 10308

ANY "BLIND" ASSEMBLIES?

This is how leading appliance manufacturers get fasteners into inaccessible places.



A—Inner View. GRIPCO "Clinch" Nut ready to insert into hexagonal hole in metal. Shows "pilot" and hex hole before clinching.

B—Cross-Section view after pilot has been clinched and bolt inserted. Can be locked at any point. (Non-locking nut can be supplied if preferred)

Try "fixed" fastening with

GRIPCO "CLINCH" NUTS

Do you have any application on which fastening must be made from a hard-to-get-at point; or do you need additional threading depth for applying bolts to thin metals? Investigate this method of firmly affixing GRIPCO "Clinch" Nut to the work so it is already in position when bolt is applied.

GRIP NUT COMPANY
310-S S. Michigan Ave., Chicago 4, Ill.

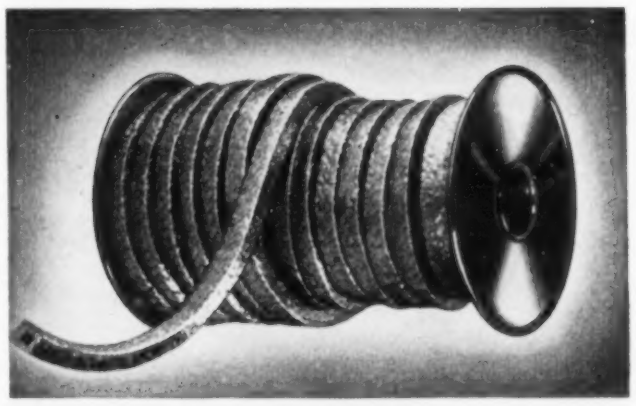
Write for samples, stating types and sizes of nuts used.

If you write maker identify as IEN - 10309

R/M's BIG 7 packing types cover 95% of all packing needs

Yes, unless you have extremely rare packing applications, your needs can be met entirely by R/M's new basic line of *just seven* field-tested packing types. Three or four are probably all you'll need to take care of your requirements. Ask your distributor to show you how you can lower your inventories, simplify your ordering, reduce downtime by standardizing on R/M's "Big 7."

Here's the story on TYPE 2



Type 2 Is R/M High-Pressure Valve Stem Packing

It comes in two numbers—R/M 303 and R/M 1326-J. Both of these packings have a core of universal plastic packing over which is braided a woven asbestos jacket.

R/M 303 has Monel wire in the jacket. This packing is recommended for valve stems on high pressure and high temperature equipment to 800°F; for pressure equivalents of saturated and superheated steam; for valve stems with Brinell hardness of 400 or better.

R/M 1326-J is non-metallic. It is recommended for steel and non-ferrous valve stems handling temperatures to 800°F. It is excellent for all types of expansion joints.

R/M PACKINGS
RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

FACTORIES: Bridgeport, Conn. • Manheim, Pa. • No. Charleston, S.C. Passaic, N.J. • Neenah, Wis. • Crawfordsville, Ind. Peterborough, Ontario, Canada

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Teflon Products • Asbestos Textiles • Industrial Rubber Products • Abrasive and Diamond Wheels • Rubber Covered Equipment • Brake Linings Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose Sintered Metal Products • Bowling Balls

If you write maker identify as **IEN - 10311**

NEW ...and built for YEARS of service!

SWEEPS FAST, exceeding 100,000 sq. ft. per hr.

DUMPS MECHANICALLY in less than 24 seconds.

MORE MANEUVERABLE. Turns in only 60" radius.

PICKS UP bulky debris as well as dirt, dust.

Rugged NEW "Model 75" reverses instantly; is built for heavy duty work. Also in smaller models.

TENNANT

Model 75 Power Sweeper

Pays for itself in about 90 days . . . and is built for years of tough round-the-clock sweeping. Drives like a car; has exclusive instant reverse feature, automotive steering, mechanical dumping. Covers 48" path (with sidebrush). *Write for details!*

G. H. TENNANT CO.
2574 N. 2nd St., Minneapolis 11, Minn.

TENNANT Established 1870

INDUSTRIAL FLOOR MACHINES
OFFICES IN PRINCIPAL CITIES

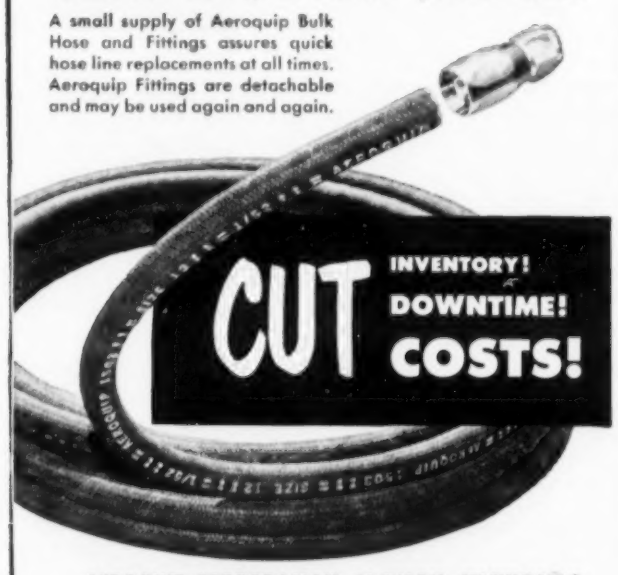
If you write maker identify as **IEN - 10312**

Aeroquip

HOSE AND FITTINGS

matched for guaranteed performance

A small supply of Aeroquip Bulk Hose and Fittings assures quick hose line replacements at all times. Aeroquip Fittings are detachable and may be used again and again.



AEROQUIP CORPORATION, JACKSON, MICHIGAN

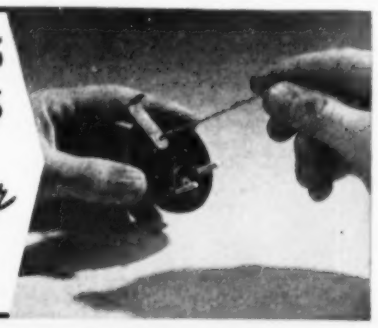
FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE

AEROQUIP PRODUCTS ARE FULLY PROTECTED BY PATENTS IN U.S.A. AND ABROAD

If you write maker identify as **IEN - 10313**

MINI-BRUSHES CLEAN HOLES

Too Small for any other method



Tiny holes in valve mechanisms, in electronics and electrical equipment, in hydraulic and pneumatic controls can be made clean, free from burrs, even burnished by Mill-Rose Mini-Brushes.

Mini-Brushes are specially made in decimal sizes to clean specific sized holes. Smallest practical size is .065". Fine materials and accuracy in manufacture are necessary to assure successful use. Length depends on the work to be done.

If cleaning tiny drilled, tapped or cored holes is your problem, we can assist you. Send print or sample part with letter outlining the result desired. Our research and know-how costs only your effort to contact us.

write today—Illustrated Bulletin on Request

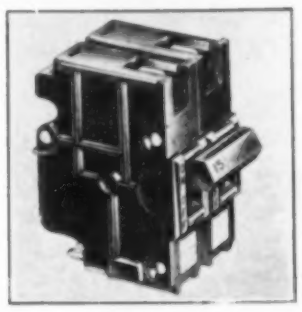
HIGH PRECISION INDUSTRIAL BRUSHES TWISTED IN WIRE

The MILL-ROSE Company 3985 EAST 59th STREET CLEVELAND 3, OHIO

If you write maker identify as **IEN - 10314**

CIRCUIT BREAKER . . Double assembly of Stab-lok thermal magnetic breakers

Source: FEDERAL ELECTRIC PRODUCTS CO.
55 Paris St., Newark 5, N. J.



Cannot spark

Two Stab-lok breakers, previously described IEN-8011-50, are assembled side by side, with a link connected arm. Both contact arms move simultaneously to "off" position if either breaker pole is tripped by an overload. The double unit "stabs" or plugs into an enclosure on circuit bars that receive contact prongs and lock them in place.

The breaker opens on light overloads at a predetermined point, on heavy overloads and on severe shorts. It passes momentary current surges, as in starting a motor. The unit pole design rates 30 amp. on 110-volt ac.

If you write maker identify as **IEN - 10315**

INSULATING . . Silicone varnishes for coils, glass tape, asbestos sheet

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

Stocked by distributor

The company announces availability, through its national distributor, Insulation and Wires Inc., St. Louis, Mo., of a new line of Class-H silicone insulating varnishes. Linde Silicone Impregnating Varnish is the designation. Three types are included.

Type R-61 is designed for use on glass cloth and tape where flexibility is a requirement. Type R-62 is employed to coat coils, armatures, stators for high temperature and heavy duty service. It permits temperature rise to 480 deg. F. Type R-63 is a bonding resin for asbestos sheet, glass, mica.

If you write maker identify as **IEN - 10316**

ROOFS . . Asphalt base coating contains asbestos, oils and silicone

Source: MONROE COMPANY
10701-5 Quebec Ave., Cleveland 6, Ohio

In 5 to 55 gal. drums

Siliconed Ruffer-seal is a new form of the company's previously developed roof coating material. It saturates and preserves roofing felts. It remains elastic and waterproof over a considerable period. It also is resistant to oxidation by sunrays and industrial fumes. It is free from checking, cracking and sagging. Application does not require heating. The material is suited for small or large roof areas.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10317**

penco LOCKER LOCKS ITSELF!

UNIQUE PATENTED FEATURE!

Penco Steel Lockers are equipped with the finest automatic locking device—a feature that "forgives" forgetfulness, prevents thefts, permits authorized locker inspection without occupant's presence! Penco's 2-WAY ACTION gives choice of automatic or manual locking—a feature you'll want!

A Complete Line of Steel Lockers — Send for Catalog

PENN METAL *Corporation of Penna.*
80 OREGON AVE., PHILA. 48, PA.
85th YEAR OF SERVICE

If you write maker identify as **IEN - 10318**

Better Welding

Heat . . . up & down slope

Improved non-synchronous performance with Square D's NEW SLOPE CONTROL

BETTER AND MORE PROJECTION WELDS through more uniform distribution of welding current.

PERMITS WELDING NON-FERROUS METALS. Reduced "spitting" at electrodes improves appearance of aluminum and other non-ferrous welds—extends electrode life.

DESIGN FEATURES

Matched Enclosures. Slope Control enclosure matches Square D Non-Synchronous Welder Controller (Nema N2), shown at right. Also matches individual Square D welding timer or contactor enclosures.

Simplified Circuit, standard components, and heavy-duty construction.

Write for Bulletin 8990 EWG. Address Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.

SQUARE D COMPANY

If you write maker identify as **IEN - 10319**

BARBER COLMAN

Wheelco Instruments

. . . faster, more accurate results controlling process variables!

MODEL 252 PANELMOUNT CAPACITROL WITH CAPACILINE . . . continuously indicates and controls temperatures, voltage, current, speed and similar variables.

For indication and control of variables capable of transmitting electrical impulses, Wheelco's Panelmount Capacitrols, with the *electronic link*, give you accurate proportioning control at low cost. On heating operations they reduce fuel costs and assure maximum product uniformity. Minimizing heat transfer lags, Capacitrols produce exceptional results on applications where automatic variation of power input is desirable. Panelmount design saves space. Unit construction permits fast, easy replacement or interchangeability of unit assemblies without dismounting case. Other models available for *high-low* or *off-on* control. Write for Bulletin PC-2.

Factory-trained field engineers in all principal cities

WHEELCO INSTRUMENTS DIVISION • BARBER-COLMAN COMPANY
Dept. 1, 1516 Rock St., Rockford, Illinois

If you write maker identify as **IEN - 10320**

ALUMINUM LOUISVILLE

STAGES 20 Inches Wide
PLANKS 12 Inches Wide

Light weight durable Contractor's Equipment designed for heavy duty service. Made of extruded aluminum rails and rungs securely riveted with the Louisville Safe Weight method for strength and serviceability. Aluminum channel decking ensures light weight — knurled surface provides sure footing.

ALSO COMPLETE LINE OF LADDERS
SEE YOUR DEALER OR WRITE US

LOUISVILLE LADDER COMPANY
1101 W. Oak St. — Dept. 2A — Louisville 10, Ky.

If you write maker identify as IEN - 10321

"Filter cartridge replacement costs cut in half!"

That's the report we've been getting from MICRO-KLEAN filter users everywhere. They get twice the effective life of an ordinary cartridge filter because MICRO-KLEAN's graduated density allows greater capacity for dirt accumulation.

Cuno's MICRO-KLEAN gives micronic filtration at high flow rates; its low pressure drop operation permits full-flow service on gravity, low pressure or suction lines.

Send for Cuno's free filtration analysis form, fill it out, and mail it to us. We'll let you know exactly what you need to handle your filtration requirements — without obligation. Cuno Engineering Corp., Dept. 6914M, Meriden, Conn. M.3.14

Remember . . . if you can pump it, Cuno can filter it

If you write maker identify as IEN - 10322

HARD-HITTING! RUGGED! COMPACT!

"Super Slugger"

The Electric Hammer With The Neoprene "Cushion-Snap"–

NO KICK!

7½ LBS.
LIGHT-WEIGHT
HEAVY-DUTY

NEW TYPE HAMMER
Delivers "Terrific Wallop"!

CHECK THESE ADVANTAGES—

New method of impact motion ✔ Hard hitting, powerful blow ✔ No kick on armature or operator ✔ Rugged, finest materials ✔ Dependable performance ✔ Compact, fits tight places ✔ Light weight — one hand operation ✔ Portable-plug in anywhere (A.C. or D.C.) ✔ Adaptable — with tools for every kind of work ✔ Easy maintenance, simple lubrication ✔ Keeps cool with built-in fan ✔ Power head can be rotated 180° ✔ Low in cost — can save time, trouble, money for you!

DOES HUNDREDS OF DIFFERENT JOBS

Drills Concrete • Drills Masonry • Cuts Sheet Metal • Chips or Channels Concrete or Metal • Cleans Mortar Joints • Scales Rust • Strips Old Flooring • Caulks Soil Pipe • Cleans and Peens Welded Joints

Write FOR CATALOG
On "Super Slugger" and Line of Tools
Manufactured by Noble & Stanton, Inc., Bedford, Ohio

TEMPO PRODUCTS CO.
2075 EAST 65th ST. • CLEVELAND 3, OHIO

☐ Please Send Catalog, Prices and Complete Data
☐ Please Arrange Demonstration of Super Slugger

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____ C

Dealers—Write for Information

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

Identify as IEN - 0661

ADHESIVES . . Nine materials for such uses as plywood to metal or neoprene to glass, also seven coating materials for corrosion and abrasion resistance, eight sealing materials for uses from auto windshields to aircraft tanks. Summary in 8-page Bulletin Z-AIF. Minnesota Mining & Mfg. Co., 421-25 Piquette Ave., Detroit 2, Mich.

Identify as IEN - 0662

BOILERS . . Automatic steam generator from 15 to 500 hp. is described in 16-page Bulletin 1219 as to design features, construction points, ratings, dimensions. Orr & Sembower Inc., 860 Morgantown Road, Reading, Pa.

Identify as IEN - 0663

ELECTRIC CABLE . . Revised information on insulated aluminum power conductors, including properties, problems, advantages, making connections. Booklet OK-1070, 16 pages. Okonite Co., 30 Canal St., Passaic, N. J.

Identify as IEN - 0664

CARBON PARTS . . Graphitar is a carbon-graphite material that is light, hard, self-lubricating, chemically inert, dimensionally stable, and a good electrical conductor. How these properties are utilized is described by 70-page Handbook GT-54 with application and engineering data. U. S. Graphite Co., 1619-23 Holland Ave., Saginaw, Mich.

Identify as IEN - 0665

CASTERS . . Available originally only for textile-industry use, company now offers its line of steel and rubber-tire casters for general industrial service. Suggestions on selection, sizes, ratings in 12-page "Caster Catalog." Wil-Mat Corp., 2509-13 Wilkinson Blvd., Charlotte 8, N. C.

Identify as IEN - 0666

COMPRESSORS . . Oil-free reciprocating compressor uses graphite piston rings and carbon-ring rod packing. Sizes of Model WGO-9 are 25 to 75 hp. Other sizes mentioned in 8-page Bulletin A-44 are to 600 hp. Joy Mfg. Co., 253 Henry W. Oliver Bldg., Pittsburgh 22, Pa.

Identify as IEN - 0667

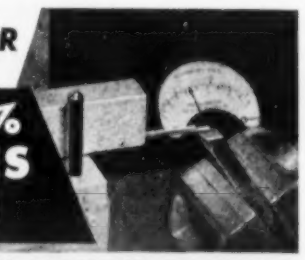
CONNECTORS . . Crimp-type solderless terminal lugs and splice caps, crimping tools to use with them, also molded terminal blocks. Catalog 53, 16 pages. Buchanan Electrical Products Corp., 225-A Highway 29, Hillside, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10324

The PROFILOMETER helps you get

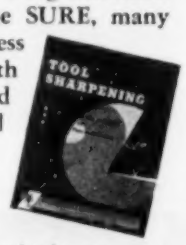
90% to 800% MORE PIECES PER GRIND



from cutting tools of all types!

WELL-KNOWN COMPANIES report *tool life increased 90% to 800% and more*—simply by smooth-finishing the tool faces after sharpening. This same smooth-finishing also enables the tools to produce a *more consistent finish* on the work.

These benefits usually require grinding or lapping the tool faces to a finish of 1 to 5 microinches. A difference of a few microinches makes a big difference in performance. Therefore, to make SURE, many companies *specify* microinch roughness of tool surfaces, and *measure* it with the Profilometer. The savings obtained far outweigh the little time required to make such measurements.



FREE BULLETIN L22 gives details. Write for it!

Profilometer is a registered trade name.

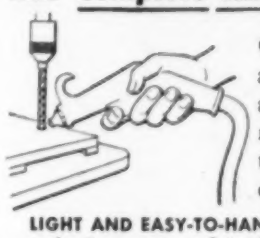
MICROMETRICAL MANUFACTURING COMPANY
345 S. MAIN ST., ANN ARBOR 1, MICH.

If you write maker identify as IEN - 10325

Only this Quick-Cleaning

Bully-Blow Gun

has Complete Air Pressure Control



• Where air is used to clear away chips, shavings, filings, and moisture, the exclusive metering trigger produces just the amount of air the operator wants.

LIGHT AND EASY-TO-HANDLE The Bully Blow Gun weighs only 7 ounces and is shaped to fit securely in the hand of the operator.

LAST FOR YEARS Made of high-strength aluminum, the Bully Blow Gun stands up under hard use and won't rust or corrode.

NO UPKEEP NOR REPAIRS Bully metering trigger can not leak, eliminates discs, stuffing boxes and springs. There's nothing to wear out.

WRITE TODAY FOR DETAILS Complete information available on the Bully Blow Gun, Bully Fulflo Air Filter, and the Big (50 Oz.) and Bantam (22 Oz.) Bully Air Hammers.

Superior Pneumatic & MFG. INC. 4758 WARNER ROAD CLEVELAND 25, OHIO

If you write maker identify as IEN - 10326

NO SCREWS, RIVETS, TACKS or TOOLS

PERMANENT PRODUCT IDENTIFICATION

IN JUST A FEW SECONDS

"AUTOGRAPHS" adhesive-back metal nameplates adhere *permanently* to wood, metal, paint, plastic . . . *any surface* . . . without tacks, rivets or screws . . . drills, hammers or skilled labor. A flick of a solvent-saturated brush, slight finger pressure and "AUTOGRAPHS" are ready to *start selling* and *keep selling* your name and your products *for life!*

Colorfully lithographed, eye-catching "AUTOGRAPHS" are produced in many sizes on many types of metal. Learn today how "AUTOGRAPHS" can put your name in front *in seconds* and keep it there *for years!*

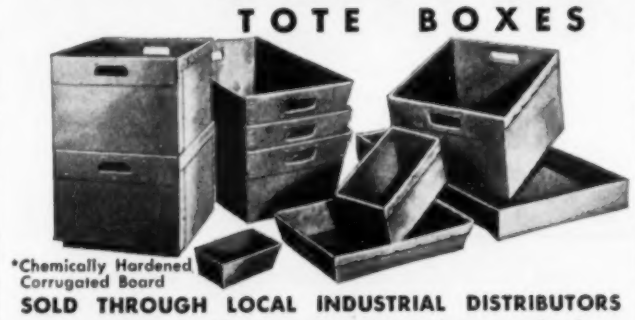
ADVERTISING IMPRESSIONS THAT *STICK!*

WRITE TODAY on your letterhead for samples and literature. Dept. N-5.

METALcraft INC. MASON CITY, IOWA

If you write maker identify as IEN - 10327

FAMOUS "CHEM-BOARD"* **CONVOY** TOTE BOXES



*Chemically Hardened Corrugated Board

SOLD THROUGH LOCAL INDUSTRIAL DISTRIBUTORS

Cost—weigh—50% to 60% less than steel. A wide range of sizes in standard and custom made NESTING, STACKING, VERTICAL TOTE BOXES. Write for complete information, prices, name of distributor in your area.

CONVOY RECORD STORAGE FILES
Sold Only by YOUR LOCAL STATIONER

Used by most famous names in industry and businesses of all kinds. CONVOY "CHEM-BOARD" files for record storage made in letter, legal, and 12 other sizes. Stack to ceiling, mate together. Call your local stationer or write for name of stationer nearest to serve you.

CONVOY, INC.
Canton 6, Ohio
P. O. Station B, Box 216-1

If you write maker identify as IEN - 10328

RE-ROOF AT ½ COST

Buildings like these all over America are saving with Tropical's New COLD PROCESS system!

NEW ROOFING MATERIAL THAT STAYS *Plastic* FOR EXTRA YEARS OF SERVICE

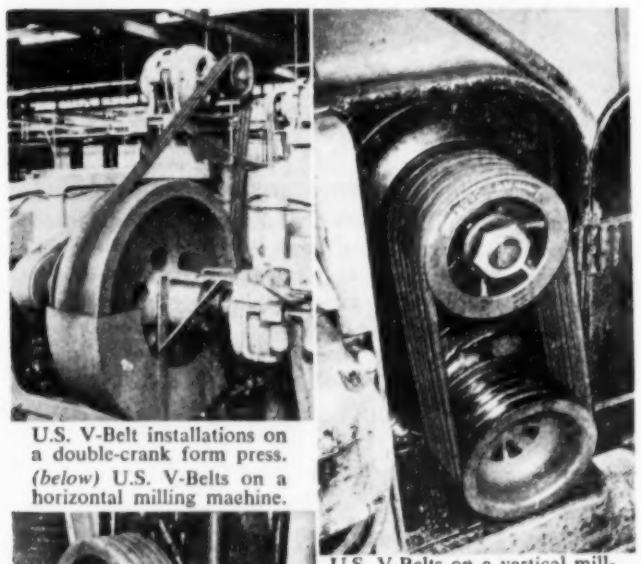
Re-roof *better* . . . save 50% in cost! Tropical system uses Cold-Process Roofkoter, specially developed, triple-thick felt, *unskilled labor!* No fire hazard. Roof doesn't shrink, crack, powder or dry out. You get durable, trouble-free, weather-tight roof . . . the Tropical way!

Free Your business letterhead request brings a FREE copy of "Saving Old Roofs." Get these money-saving facts! Write today!

THE TROPICAL PAINT & OIL CO. SINCE 1883
1126-1230 W. 70th St., Cleveland 2, Ohio

If you write maker identify as IEN - 10329

"U. S." V-Belt engineer eliminates 51 sizes from customer's stockroom!



U.S. V-Belt installations on a double-crank form press. *(below)* U.S. V-Belts on a horizontal milling machine.

U.S. V-Belts on a vertical milling machine.

Chart shows reduction of V-belts in customer's 2 plants after survey by "U.S." engineer.

	PLANT 1		PLANT 2		TOTAL	
	Pre-survey	Post Survey	Pre-survey	Post Survey	Pre-survey	Post Survey
No. V-Belt Drives	1084	1084	308	308	1392	1392
No. V-Belts	3103	3103	757	757	3860	3860
No. V-Belt Sizes	152	109	85	70	169*	118*
No. Sizes Eliminated		43		15		51*
Percent Decrease in No. Sizes Used		28.2%		17.6%		30.2%

*Duplicate sizes in each plant not counted in this total.

Here's what the Plant Maintenance Manager said: *"Stocks have been simplified . . . and the ordering of replacement parts has been made much easier."* With U.S. Rainbow® V-Belts, 51 sizes were eliminated—a saving of 30.2%. This was the result of a survey made by a U.S. Rubber engineer in two plants of a leading aircraft manufacturer. So impressed was the customer by the thoroughness of this "U.S." engineering service that he has invited "U.S." to make a Packings Survey.

"U.S." has the largest collection of V-Belt molds in the world and can fill any requirement. "U.S." engineers do not believe their job stops when the sale is made. You will find them constantly helpful in belt service and selection. Call them at any of our 25 District Sales Offices or write to address below.

"U.S." Research perfects it
"U.S." Production builds it
U.S. Industry depends on it.

U.S. RUBBER SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe & Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

NEW LITERATURE—Continued

Identify as IEN - 0668

CONVEYOR IDLERS . . Some 500 models in 34 types in new 48-page Book 2416 include 20 and 45-deg. troughing units, rubber-cushion and flat-belt models, accessories and a set of instructions on how to select them. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill.

Identify as IEN - 0669

BELT CONVEYORS . . Package-handling models in power belt and gravity designs include one that stretches or contracts depending on length required. Details and standard sizes are given in 12-page Bulletin 400. A. B. Farquhar Division, Oliver Corp., 140-44 N. Duke St., York, Pa.

Identify as IEN - 0670

CHAIN CONVEYOR . . Disc-shaped flights ride inside a tube to convey wet or dry material at any plane or angle. Tube size is 3 to 12 inches. Drawings give you an idea of layouts possible in 4-page Bulletin HEN-105. Hapman Conveyors Inc., 628-32 Gibson St., Kalamazoo, Mich.

Identify as IEN - 0671

CORROSION PROOFING . . Plastic resin-base coatings for petroleum-industry service are described as to service examples, test results in 8-page Folder J-744. Bakelite Co., 30 E. 42nd St., Room 1503, New York 17, N. Y.

Identify as IEN - 0672

CRANES . . Overhead electric traveling cranes from 5 to 350 ton and up, in standard, industrial, low-head, grab-bucket, mill and gantry types. Catalog, 56 pages, covers trolleys, drive and a variety of installations. Bedford Foundry & Machine Co., Spencer St., Bedford, Ind.

Identify as IEN - 0673

CUTTING TOOLS . . Standard carbide tools and blanks in condensed catalog with list prices. "Brief-A-Log" GT-265, 20 pages, has a pictorial index, includes turning, boring, rock-drilling tools. Carboloy, Dept. General Electric Co., 11167 E. 8-Mile Road, Detroit 32, Mich.

Identify as IEN - 0674

DRILL BUSHINGS . . Price list on drill jig bushings and liners gives dimensions and tolerances on standard units, pictures of specials. Price List B-649-A, 12 pages. Colonial Bushings Inc., 31778 Groesbeck Highway, Fraser, Mich.

Identify as IEN - 0675

V-BELT DRIVES . . Stock drives from 1 to 250 hp. and one to twelve grooves, also standard drives to 1,000 hp. are given by tables in 56-page Catalog V-1000, available on letter-head request. It also gives sheave dimensions, selection tables, ratio tables, belt lengths. Pyott Foundry & Machine Co., 326-30 N. Sangamon St., Chicago 7, Ill.

Identify as IEN - 0676

ELEVATORS . . Tilting loading-dock ramps and truck lifts, straight platforms lifts, crossover bridges, service lifts for industrial trucks, are included in the picture summary provided by 16-page bulletin, "Liftronics". Wayne Pump Co., 531 Tecumseh St., Dept. LT-6, Salisbury, Md.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10331

Heavy metal parts now shipped in Cardboard instead of Wood

—THANKS TO NEW POLYKEN HIGH TENSILE TAPE

New Polyken High Tensile Tape enables the Hawker Manufacturing Company of Dayton, Ohio, to cut shipping costs by using cardboard cartons instead of wooden crates. This saving was never possible before because no other method or material satisfactorily closed and reinforced the cartons.

Here's why Polyken High Tensile, Cloth Backed Tape does the job:
This is the only high tensile tape with non-split cloth backing—plastic coated to resist weather.
Excellent adhesive quality fuses this tape to the carton without crushing or cutting—provides lasting hold without creep or edge roll.
Application is fast—6 times faster than banding—and no special tools are required.

New Polyken High Tensile Tape now available in Gloss Black, No. 360; and Non-Staining Gloss White, No. 361. Write for free samples and specifications. Polyken, Dept. IEI, 222 West Adams Street, Chicago 6, Ill.

Polyken®

INDUSTRIAL TAPES
Department of Bauer & Black • Division of The Kendall Company

If you write maker identify as IEN - 10332

NEW.. COMPLETE LINE of END MILLS by GO & GO

SEND FOR CATALOG

NOW you can get off-the-shelf delivery on end mills that GO & GO . . . New styles . . . Additional sizes . . . Long lengths, extra-long lengths, small diameters and 2" dia. shank heavy duty end mills have been added to provide a complete range, as standardized by the Metal Cutting Tool Institute. The famous GO & GO quality is built into these tools. Write for new, convenient catalog covering all standard end mills and milling cutters.

GODDARD & GODDARD COMPANY
MILLING CUTTER ENGINEERS AND MANUFACTURERS
P. O. Box 68, Brightmoor Station
DETROIT 23, MICHIGAN

If you write maker identify as IEN - 10333

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for DEHYDRATING

Solutions, emulsions and materials which can be handled in a liquid form including:
Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

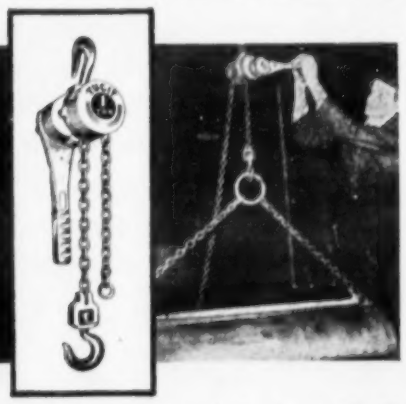
The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

Write for New FREE Bulletin 265

DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 10334

MUSCLE-SAVER AT WORK



Thousands of load-handling jobs become a cinch when a 'Tugit' goes to work. It's a tool-box size hoist — the ideal all-around tool for easy lifting, pulling, stretching *at any angle*. Action is fast and smooth. The 'Tugit' has efficient spur gears and a powerful load brake like a hoist.

A 'Tugit' Hoist is easy and safe to use anywhere. It's light, compact, portable. A 40-lb pull on the lever lifts a 1-ton load. Close spotting is easy — loads can be moved as little as 3/32" at a time. The handle won't kick back and cause injury. One and two-ton sizes available. For full details, write for Bulletin No. 388.

'TUGIT'® HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and 'Load Lifter' Cranes. 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, and 'American' Industrial Instruments.

If you write maker identify as IEN - 10335

The Quick, Easy, Handy Way to TAP BY HAND

. . . Adapts for LATHE USE

THE DAHLSTROM TAP GUIDE virtually eliminates tap breakage—and saves those costly hours spent prying broken taps out of dies. Saves time, too. Just a few turns of the handle and the job is done.

Winds through continuously, with no backoff. Work is always dependably straight and square. Fasten it to a post or set it on top of a big job. This handy tapper comes equipped with 9 adapters, 8-32 to ¾" but taps are not furnished. Spindle can be pulled out and used in a lathe, or used as tap extension for hard-to-get-at-places. 13" x 8" x 14", wt. 32 lbs. *Send for bulletin!*

Also Makers of Dahlstrom Autostop and Top Chuck

BRANCH MFG. CO.
NORTH BRANCH, MINN.

Dahlstrom TAP GUIDE — 59.50 F.O.B. FACTORY

If you write maker identify as IEN - 10336

Aerovent FAN BELTED DUCT FAN

KEEPS MOTOR OUT OF AIR STREAM

For Foundries, Paint Spray Booths, Sanding, Acid Tank Rooms, etc., where fan motors must be protected

Aerovent Belted Duct Fans with "Macheta" design handle maximum air with minimum use of power. Sizes 12" to 84"; 2, 4, or 6 blades. All fans furnished with ball bearing motors suitable for mounting in any position. Easily installed. For many applications.

Certified Ratings — PFMA

Other Models: Direct Connected, Man Cooling, Extended Shaft, Duct Type, Pulley Drive.

Write today for ENGINEERING BULLETIN

AEROVENT FAN CO., INC.
ASH AND BROWN STREET, PIQUA, OHIO
Sales Engineers in Principal Cities

If you write maker identify as IEN - 10337

PLAN NOW

to be in BOSTON for the 8th Annual NATIONAL Industrial Packaging & Materials Handling EXPOSITION

MOST INFORMATIVE SHOW IN THE INDUSTRY

OCTOBER 20-21-22-1953
MECHANICS BLDG. • BOSTON, MASS.

YOU WILL EXAMINE — New, unusual, refined, modernized products, equipment and materials

YOU'LL GET TO KNOW — Foremost industrial packaging and materials handling men

YOU CAN LEARN — The newest—from the renowned "Short Course" in packaging and materials handling (Sponsored by Mech. Eng. Dept. of M.I.T.)

YOU WILL SEE — Interesting, instructive entries in the National Protective Packaging and Materials Handling Competition.

First National Packaging and Materials Handling Show in the GREAT NEW ENGLAND MARKET

SOCIETY OF INDUSTRIAL PACKAGING & MATERIALS HANDLING ENGINEERS
ROOM 902-E, 20 W. JACKSON BLVD., CHICAGO 4, ILL.

MAIL COUPON NOW FOR FULL INFORMATION
NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

NEW LITERATURE—Continued

Identify as IEN - 0677

ENGINES . . Picture book of 64 pages shows 260 applications for air-cooled gasoline engines in a variety of industrial and non-industry equipment. Ask for Form S-150. Wisconsin Motor Corp., 1908-12 S. 53rd St., Milwaukee 46, Wis.

Identify as IEN - 0678

EQUIPMENT . . Standard Products is new division to handle company's line of car pullers, car loaders, speed reducers, belt idlers, winches. Summary in 4-page Bulletin 653. Stephens-Adamson Mfg. Co., 231 Ridgeway Ave., Aurora, Ill.

Identify as IEN - 0679

COATED FABRICS . . Made of woven glass coated with Teflon resin. Properties and uses in sheet, tape and laminate forms are given in 4-page technical bulletin, "Teflon Coated Glass Fabrics". E. I. du Pont de Nemours & Co., 812 Empire State Bldg., New York 1, N. Y.

Identify as IEN - 0680

FASTENING TOOLS . . Steel to concrete, wood to steel, steel to steel are some of the fastening combinations possible with the Ramset cartridge-power tool. Instructions, recommended fasteners, application suggestions in 32-page "Modern Fastening Methods." Ramset Div., Olin Industries, 12120 Berea Road, Cleveland 11, Ohio

Identify as IEN - 0681

FEEDING . . Constant-weight and volumetric feeders for bulk material control the rate of its withdrawal from bins or hoppers. These and other feeders, together with information on the "Electric Ear" grinder control, are in 12-page Bulletin 33-E. Hardinge Co., 238-42 Arch St., York, Pa.

Identify as IEN - 0682

FILTERING . . Liquid filters in disc, cartridge and pressure designs, also oil conditioners, vacuum stills, magnetic separators, flotation units to handle coolants, lubricants, solvents. Bulletin A-943 8 pages. U. S. Hoffman Machinery Corp., 53 Thompson Road, Syracuse 6, N. Y.

Identify as IEN - 0683

FLOATS . . Welded floats of stainless steel, Monel and chrome-plated steel in spherical, elliptical and cylindrical shapes, 2 to 14 in. in diameter, pressure to 4,800 lb. Sizes, ratings, list prices in 8-page Bulletin 753. W. H. Nicholson & Co., 10-14 Oregon St., Wilkes-Barre, Pa.

Identify as IEN - 0684

FLOOR PLATES . . Formed steel plate is about 12 in. square, has 53 anchor lugs bent in eight directions to hold it in place in a concrete floor. Illustrated uses in 4-page "Stelcon Anchor Plates". Armco Drainage & Metal Products, Inc., 701-5 Curtis St., Middletown, Ohio

Identify as IEN - 0685

FORGINGS . . In brass, bronze and aluminum alloys are described in 36-page Catalog H-58565 as to factors in design, available alloys and their properties, production methods, machining recommendations, facilities. Mueller Brass Co., 1923-27 Lapeer Ave., Port Huron, Mich.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10338

Specialize

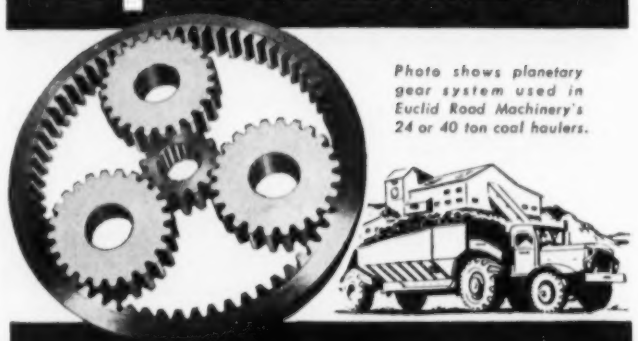


Photo shows planetary gear system used in Euclid Road Machinery's 24 or 40 ton coal haulers.

Standardize

GEARS OHIO REDUCERS

• Ohio Gears are at work in all their glory when operating for Euclid Road Machinery, world's leading manufacturer of heavy duty coal haulers and earth moving equipment. Here's where gear engineering, strength and durability meets its test, on long hauls, up and down steep grades, forward and backward over broken terrain, at any angle, pushing and pulling 25 or 40 ton loads on 4 wheel planetary gear drives, at various speeds, tensions and stresses. All this on Ohio Gears, every day, year in and year out, with engineering in every ounce of metal and every measurable gear dimension . . . Euclid Road Machinery demands dependable gears. Perhaps your products need such mechanical insurance. See our nearest distributor or write direct.

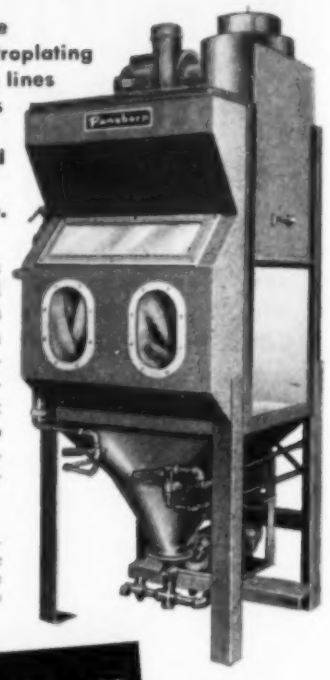
ESTABLISHED 1915
THE OHIO GEAR COMPANY
1345 E. 179th St. • Cleve. 10, Ohio

OHIO GEARS

If you write maker identify as IEN - 10339

Pangborn HYDRO-FINISH

- deburrs • removes scale
- prepares surfaces for electroplating
- removes, blends grinding lines
- finishes threaded sections for fit
- improves die making and maintenance
- improves cutting tool life.



PANGBORN Hydro-Finish does all these jobs and more! Fine mesh abrasives suspended in water give you a precision finish . . . hold tolerances to .0001". Vary abrasives, air pressures, work distances, ratio of liquid to abrasive and you can do almost any finishing job faster and better!

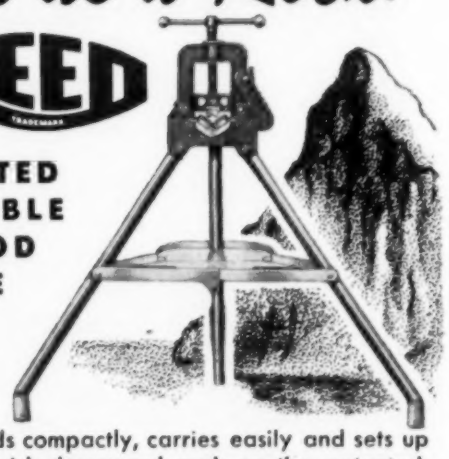
GET THE FACTS on how Hydro-Finish can save *you* money! Write for Bulletin 1400A to: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn BLAST CLEANS CHEAPER
with the right equipment for every job

If you write maker identify as IEN - 10340

Solid as a Rock!

the REED



PATENTED PORTABLE TRIPOD VISE

One unit. Folds compactly, carries easily and sets up instantly. A quick downward push on the patented, large-surface tray locks the stand solidly so that all cutting or threading effort goes into the work. Legs cannot buckle under any working conditions. They line up vertically with the face of the well-known REED long-jaw vise. *Ask your jobber or write . . .*

REED TRADEMARK
MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

If you write maker identify as IEN - 10341

Grammes NAME AND INSTRUCTION PLATES

. . . they give you a 3-way advantage!

. . . *Quality* that enhances the value of your product!

. . . *Economy* through lowest cost per good impression!

. . . *Service* that helps you meet production schedules!

PROMPT DESIGN HELP—Your rough sketch or blueprint will bring helpful recommendations and prices. Write for new booklet, "Tips on Name Plate Selection and Design."

METAL STAMPINGS · NAME PLATES · DIALS · ADVERTISING SPECIALTIES · TRIMS • BEZELS · PANELS

L. F. GRAMMES & SONS
ALLENTOWN, PA.

SPECIALISTS IN DECORATIVE METAL

If you write maker identify as IEN - 10342

Latest data from Western Precipitation on Cottrell Recovery Equipment!

Do you have operations in your plant where gas-laden suspensions, wet or dry, are a problem? Such suspensions may be falling on surrounding property, causing nuisance difficulties. Or perhaps important values are being lost that can be profitably recovered.

Whatever the nature of *your* recovery requirements, you will find this 40 page Cottrell booklet of great help. It contains up-to-date data on the latest advancements in Cottrell recovery methods — prepared by the organization that pioneered commercial application of Cottrell Electrical Precipitators almost a half century ago and has consistently led in new Cottrell developments.

40 PAGES of helpful information

on Recovering Dusts, Fly Ash, Mists, Fumes and other Suspensions from Stack Gases

This booklet summarizes such important data as . . .

- Basic types of Cottrell equipment.
- Various types of Collecting Electrodes.
- Various Shell Constructions.
- Data on CMP Units.

. . . and many other helpful facts.

This data-packed booklet is free. Ask for Bulletin C103R.

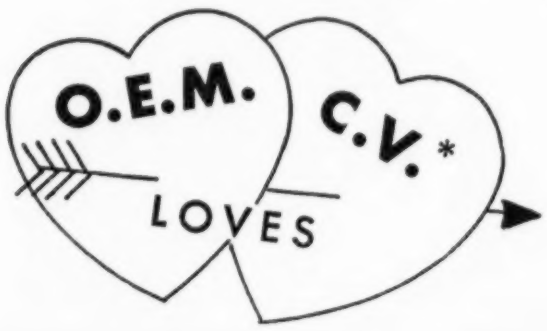
WESTERN Precipitation CORPORATION

ENGINEERS, MANUFACTURERS & MANUFACTURERS' AGENTS FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA

CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2 • 1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4 • PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 10343

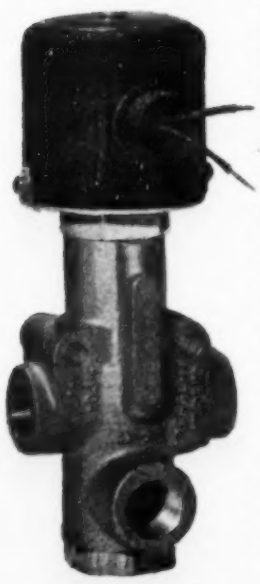


MADE FOR EACH OTHER

Original Equipment Manufacturers who have been steady Crescent Valve users include many leading companies in their respective fields.

For many years now, Crescent Valves have been designed into cement batching equipment, spot welders, industrial weighing equipment, hopper control for chemical plants, conveyors and work feed equipment, pilot control of large diaphragm operated valves, riveting machines, and many others.

Crescent Valves were **made for the O. E. M.** who has to design millions of cycles into his equipment without service worries from valve trouble or solenoid burn-out.



model 1034 3-way valve

The production minded O. E. M. will recognize, at a glance, that Crescent Valves are designed for volume production; that's why the price is low and the delivery prompt.

The sales minded O. E. M. will appreciate the extreme flexibility of Crescent Valves. They can be converted to practically any AC or DC voltage by simply changing coils. Sales and service are handled by a national organization represented in every major trading area by competent field engineers.

*Crescent Solenoid Operated, Pilot Controlled, 3-Way and 4-Way Valves for air, water, and light oil service. Sizes 1/4", 3/8", 1/2", and 3/4". Pressures to 500 P. S. I.

Write for Catalog 3C-1.

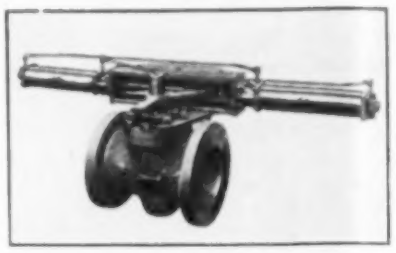
BARKSDALE VALVES

5125 Alcoa Avenue, Los Angeles 58, Calif.

If you write maker identify as IEN - 10345

VALVE . . Tandem cylinder assembly for pressure operation of a plug valve

Source: LEDEEN MFG. CO.
1602 S. San Pedro St., Los Angeles 15, Calif.



Ask for Bulletin 3000

Opposed cylinders are mounted on a common head and are connected by a roller equipped coupling in this new Tandem Type plug valve actuator. A hardened lever arm applies between the rollers and is secured to the plug stem to rotate it when pressure is applied for movement in one direction or the other. The cylinders are interconnected. Installation can be made for pressure by means of air, gas, oil, water or steam in a pressure range between 35 and 750 pounds.

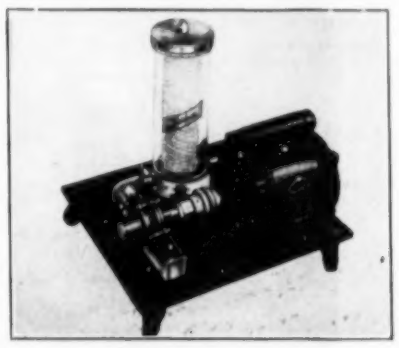
Control is to specification by direct or remote means. Instrument controls, to actuate the cylinders at standard line pressures, can be obtained from the use of master control valves, pilot operated by instrument air at 5 to 15 pounds. Additional controls include pressure relief valves to prevent excessive stem pull at the end of the stroke, limit switches or valves to cut actuator power at the end of the stroke, speed control valves to regulate the time of opening and closing, emergency controls to permit operation in the event of main pressure source failure. Hydraulic actuators can be supplied with an auxiliary hand pump and pneumatic actuators with an auxiliary pressure storage reservoir.

Cylinder dimensions range from 2 by 8 in. to 6 by 24 in. for torque rating from 2,330 to 65,400 in. lb. based on operating pressure at 100 pounds.

If you write maker identify as IEN - 10346

FILTERING . . Cartridge type unit and pump equipped for acids, alkalis

Source: SETHCO MFG. CO.
72-76 Willoughby St., Brooklyn 1, N. Y.



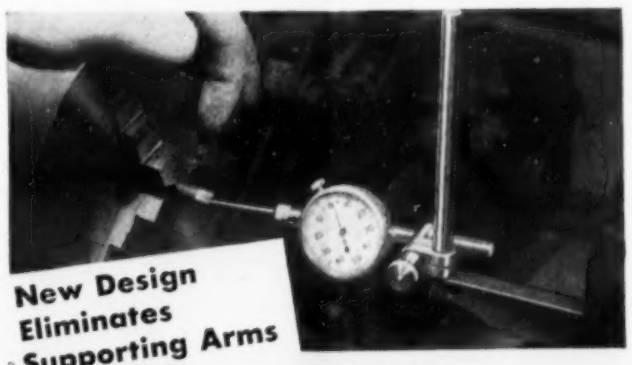
Down to 1 micron

Model LSIN-5, with a filter rating at 50 gph., and Model LSIN-10 rating 100 gph. are new sizes in the company's line of filtering equipment, previously described IEN-963-53. The pump is driven by a ¼-hp. ball bearing enclosed motor for operation on 110-volt 60 cycle ac. It is rated at 6 gpm. on free delivery and will develop 40 lb.

The filter housing can be specified in lucite, Haveg, stainless steel or in rubber or resin lined assembly. It encloses a filter tube that also can be specified in porous stone, porous carbon or stainless steel wound with dynel or cotton yarn. A Bakelite tube can be used in place of the stainless steel. The yarn is wound to ¾ in. in thickness to eliminate any chance for channeling or rupturing. Overall dimensions are 14 by 16 by 12 or 16 in. in height. Weights are 50 and 60 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10347



New Design Eliminates Supporting Arms

LUFKIN

UNIVERSAL DIAL TEST INDICATOR

Shortens Working Time

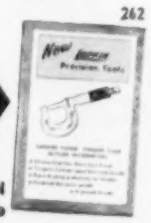
Modern simplified design gives faster readings, guarantees long accurate service. Extra long hole attachment screws directly into base — *requires no supporting arms.* One piece base and shank, jewelled thrust bearing, smooth, sensitive mechanism that requires no oiling, adjustable bezel and the easy-to-read dial make the Lufkin Universal Dial Test Indicator lighter, more accurate, more durable. Packed in fitted wood cases complete with all attachments.

262

Many New LUFKIN Precision Tools make your work easier and better

SEND FOR *Free* ILLUSTRATED New Tools Booklet

BUY LUFKIN TAPES • RULES • PRECISION TOOLS From Your Distributor



THE LUFKIN RULE CO., Saginaw, Michigan, Dept. IEN
132-138 Lafayette, New York City — Barrie, Ontario

If you write maker identify as IEN - 10348

See How OTHERS Cut Cost with MULTIPRESS

Facts and figures from hundreds of actual users tell *how* the smooth oil-hydraulic power and control of Multipress cuts production costs. Our Data Log reports on these applications may answer some of your own production needs.

Multipress offers fully adjustable *ram speed, pressure and stroke length.* Pressures build up as the ram contacts work . . . *no hammer-blow impact.* Automatic time delay, for ram dwell, and many other types of ram controls, auxiliary feeds, accessories and attachments can be provided with Multipress.

Let us send you DATA LOGS on types of operations your work requires!

The DENISON Engineering Company
1150 Dublin Road, Columbus 15, Ohio

MULTIPRESS

If you write maker identify as IEN - 10349

WATER PICK-UP

with SPENCER VACUUM

Any Spencer Vacuum System will pick up liquids—after scrubbing, accidental spillage or floods and from sump tanks. For large volume pick up, special collector tanks from 6 to 100 gallons capacity or liquids may be discharged direct to the sewer.

Spencer also picks up hot materials, reclaims metals and of course will clean large industrial areas and your offices in a remarkably short time. Bulletin on request.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

466-P

If you write maker identify as IEN - 10350

EXCELSIOR CO. staples bicycle cartons . . saves $11,000 a year

$36 a day . . $11,000 a year! That's the saving chalked up by an International Carton-Stapling Machine at Excelsior Mfg. Co., Michigan City, Indiana, nationally known manufacturer of bicycles.

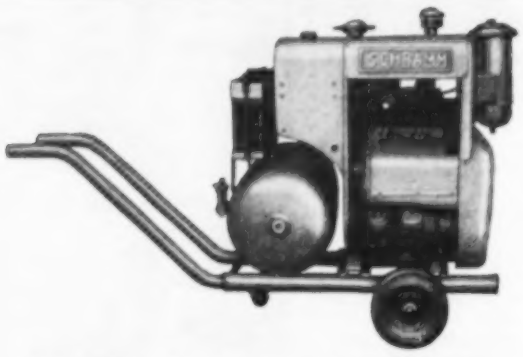
Here's Excelsior's "before-and-after" story: "Formerly our packaging department had 7 men. Now we use only 4. Per-man closure with stapling machine is 19, compared to 11 in same period using glue. Cartons look better because there is no glue spillage."

International Carton-Stapling Machines will save you up to 50% on packaging costs . . write for details.

INTERNATIONAL STAPLING MACHINES

INTERNATIONAL STAPLE & MACHINE COMPANY
800 East Herrin Street, Herrin, Illinois

If you write maker identify as **IEN - 10351**



Complete Engine Driven Compressor for Shop Maintenance

- TWO SIZES, 20 and 35 c.f.m. with electric push button starting.
- PAINTING — WATERPROOFING, spraying light, heavy, or roofing and caulking material.
- STEEL ERECTION, drilling, reaming, riveting, impact wrenches, grinders and many other tools.

Other Engine Driven models available in sizes including: 20—35—60—105—210—315—600 c.f.m.

WRITE FOR CATALOG 5101-A

SCHRAMM, INC.
the compressor people
WEST CHESTER, PA.

If you write maker identify as **IEN - 10352**

B.F.Goodrich

TWAP ANALYSIS man puts an end to unnecessary industrial tire cutting, chipping

Save as much as 50% on tire costs

Debris-strewn floors, sharp projections along trucking aisles or on the trucks themselves, overloading and collisions all can cut and chip an industrial tire. Or tire failure may be caused by the tire being used on a job for which it was never designed.

The B. F. Goodrich Tire and Wheel Analysis man can put an end to unnecessary tire troubles, can save you up to 50% on industrial tire costs. He knows which tire is right for any given set of operating conditions—solid, semi-pneumatic or pneumatic—which tread design and compound is best to use. Without obligation, he will put his training to work on your problems, recommend the right tires for you to use, give you maintenance tips that can cut costs as much as 20%.

The TW Analysis man's advice is impartial, for B. F. Goodrich makes, and BFG retailers sell, a complete line of industrial tires. Use the tires he recommends and save yourself unnecesasry tire expense. Get increased, maybe even doubled, tire life.

To find out more about this free B. F. Goodrich Tire and Wheel Analysis Plan, send in the coupon or call your BFG retailer. A special TW Analysis Plan is available for manufacturers of industrial handling equipment.

Specify B. F. Goodrich tires when ordering new equipment

The B. F. Goodrich Co.
Department TW-167, Akron 18, Ohio.

Please send me:

☐ *Additional information* on your new Tire and Wheel Analysis Plan

☐ A free copy of your "Industrial Tire Guidebook".

Name _____

Company _____

City _____ Zone ____ State ____

B.F.Goodrich — RESEARCH KEEPS FIRST IN RUBBER

NEW LITERATURE—*Continued*

Identify as **IEN - 0686**

THREAD GAGES . . List prices on plug, ring, thread-setting gages are given in 20-page Bulletin SG-53 along with specification tables, tolerances, pipe-thread gages and ordering informations. Detroit Tap & Tool Co., 8613-17 E. 8-Mile Road, Base Line, Mich.

Identify as **IEN - 0687**

GAGE . . Micrometer bar has two pins that insert into a pair of holes. The pins are slid on the bar to read center-to-center distance. Diagrams in 4-page Bulletin 652 shows how it works. Range is to 12.400 inches. Sorensen Center-Mikes Inc., 262-66 Kossuth St., Bridgeport 8, Conn.

Identify as **IEN - 0688**

GLASS . . Fresnel lenses for light-beam control, color filters, instrument cases, sight glasses, cover glasses and globes are some of the 200 glass parts shown in new 20-page bulletin, "Engineered Glass", with pictures on their manufacture. Kopp Glass Inc., 2257 Palmer St., Swissvale, Pa.

Identify as **IEN - 0689**

HAMMERS . . Portable electric hammers, self-contained gasoline hammers and rock drills, tools and accessories, also portable electric saws, drills, grinders, sanders, screwdrivers, impact wrenches. Catalog 537, 28 pages. Syntron Co., 630 Lexington Ave., Homer City, Pa.

Identify as **IEN - 0690**

HEATING ELEMENTS . . Electric element made by printed circuit method can be applied to flexible materials or bonded to plastics, glass, ceramics, insulated metal. "Thermflex Radiant Heating", 4 pages. Radio Ceramics Corp., 107-11 S. Superior St., Angola, Ind.

Identify as **IEN - 0691**

THERMAL INSULATION . . Fiberglas materials for pipe, duct, equipment and low-temperature service, together with Kaylo insulation for high-temperature use to 1,200 deg. F., are detailed by new 84-page looseleaf "Industrial Insulations" catalog, available to qualified individuals only. Owens-Corning Fiberglas Corp., 100 Nicholas Bldg., Toledo 1, Ohio

Identify as **IEN - 0692**

JACKS . . Hand-operated hydraulic with pump and cylinder connected by hose to use in pulling gears, lifting machines, prestressing concrete. Twelve-page Hydraulic Bulletin 53 shows 10 to 100-ton models, also standard hydraulic jacks. Templeton, Kenly & Co., 653 Gardner Road, Broadview, Ill.

Identify as **IEN - 0693**

LIGHTING . . Replace fluorescent lamps as a group instead of individually, urges new 12-page Bulletin IB-3239, which quotes examples from industry on the procedures employed. General Electric Co., 1 Nela Park, Cleveland 12, Ohio

Identify as **IEN - 0694**

LOCKNUTS . . Elliptical threaded retainer in the Security locknut is made of metal, mounts inside the top, holds securely, can be used repeatedly. "The Nut You Can't Shake Loose", 8 pages, shows examples of application from presses to railroads, lists standard sizes and weights. Security Locknut Corp., 15th & North Aves., Melrose Park, Ill.

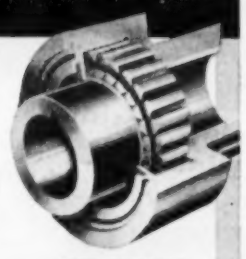
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10354**

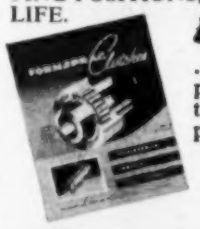
THE FULL COMPLEMENT SPRAG-TYPE CLUTCH

DESIGN ENGINEERS EVERYWHERE ARE SPECIFYING IT

Designers of equipment using over-running clutches are specifying Formsprag Clutches. Because: They've found out what a sprag is . . . What Full Complement means . . . Why that principle provides MAXIMUM TORQUE CAPACITY (for size and weight), INFINITE NUMBER OF GRIPPING POSITIONS, LONGER LIFE.



OVER-RUNNING
INDEXING (Feeding)
BACKSTOPPING



FOR YOUR FILES

. . . all the answers on the above plus engineering data, applications, etc. Write for this new 10-page illustrated brochure today.

FORMSPRAG COMPANY
23591 HOOVER ROAD
Van Dyke, Michigan

FULL COMPLEMENT **FORMSPRAG** *Clutches* DISTRIBUTORS IN PRINCIPAL CITIES

If you write maker identify as **IEN - 10355**

Power to sink holes deep in tough woods—Plus power to *back out*!

Ideal for heavy, wet or sappy timbers

$49.95

Drill inch-diameter holes *deep* in woods where bits usually stick tight—creosote planking, sappy or wet timbers. Then—a flick of the reverse switch and Cummins 202 spins *itself* out! Ends straining and hand turning to remove bits. Ends costly delays! Double-coil, dynamically balanced motor provides big reserve of power for full-speed drilling up to ½-inch in steel, 1 inch in wood. Really bargain-priced for its quality!

Cummins
CUMMINS-CHICAGO CORP.
4740 N. Ravenswood Avenue, Chicago 40, Illinois
334 Lauder Avenue, Toronto 10, Canada

If you write maker identify as **IEN - 10356**

Mark your own symbols, numbers, lettering, on your small parts, tools, identification and name plates . . . easily, simply, quickly . . . tracing from a master with the GREEN ENGRAVER.

Widely used in electronic and plastic fields, in machine tool shops and wherever permanent marking is needed. The GREEN ENGRAVER engraves equally well on metals, plastic, wood, hard rubber and glass.

Fact-filled folder on request . . . showing how economies in costs, labor and time are achieved with the GREEN ENGRAVER.

Routs Models
Profiles Engraves

Etching attachment and other special equipment for industrial uses are available.

Green Instrument Co. INCORPORATED
373 PUTNAM AVE., CAMBRIDGE, MASS.
Visit us at National Instrument Exhibit, Booth 262

If you write maker identify as **IEN - 10357**

What **FORMABILITY** **in Ductile Gibsiloys Means to YOU**

DUCTILE GIBSILOYS, which are electrical contacts made from metal powders, were pioneered years ago by Gibson to answer the demand for combinations of physical and electrical properties not possible with alloyed contact materials.

DUCTILE GIBSILOYS can be cold-headed, rolled, blanked, coined, drawn, drilled and otherwise formed in the same manner as silver alloys and fine silver. Because of this formability, they can be economically produced by Gibson in the shape required for your job.

Take advantage of the desirable property combinations in Ductile Gibsiloys and at the same time draw upon the wide variety of Ductile Gibsiloy shapes readily produced.

To learn more about properties of Ductile Gibsiloys, write for Gibsiloy Cat. C-520.

Contacts Engineered to Your Requirements

Gibsiloy ELECTRICAL CONTACTS — *Manufactured by* GIBSON ELECTRIC COMPANY
8353 Frankstown Ave., Pittsburgh 21, Pa.

If you write maker identify as IEN - 10358

CLEARING ANNOUNCES

...a new line of single and double crank straight side presses

CAPACITIES — 100 — 250 TONS

Here are the construction features you've always wanted in presses that give you economy right from the start—maintain it in years of profitable operations.

200 ton Clearing Single Crank Press

Write for free bulletins on Single and Double Crank Straight Side Presses

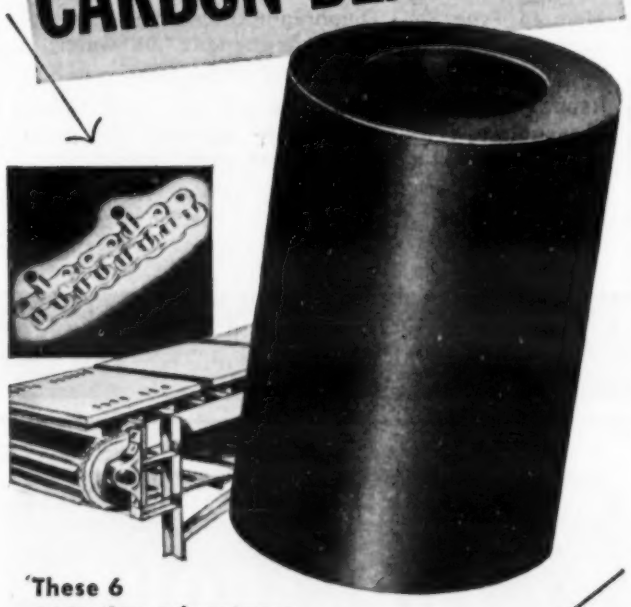
CLEARING MACHINE CORPORATION
6491 WEST 65TH STREET • CHICAGO 38, ILLINOIS
HAMILTON DIVISION, HAMILTON, OHIO

If you write maker identify as IEN - 10359

Bearing Performance Assured

IN SEALED MECHANISMS, INACCESSIBLE MACHINERY

MORGANITE
SELF-LUBRICATING
CARBON BEARINGS



These 6 operating advantages reduce machine downtime, lower maintenance costs and increase production—

1. NO LUBRICATION REQUIRED 2. NO MAINTENANCE NECESSARY 3. ELIMINATION OF COLD START DRAG 4. RESISTANCE TO HIGH HEAT 5. SELF-LAPPING AND POLISHING 6. UNAFFECTED BY MOST ACIDS AND CORROSIVES

Durable Morganite Bearings are ideal for installation in inaccessible machines, and for use in hermetically-sealed mechanisms. As their self-lubricating qualities are inherent, and not a result of impregnation, they remain efficient at high temperatures. Because the bearing I.D.'s are largely self-polishing, no expensive finishes are necessary. Morganite Incorporated, Long Island City 1, New York.

If you have a bearing problem, consult with us today —

Morganite INCORPORATED TRADE MARK

Manufacturers of SELF LUBRICATING CARBON SPECIALTIES, CARBON BRUSHES, CARBON PILES

If you write maker identify as IEN - 10361

EXTINGUISHING . . Support bracket for extinguisher, indicates readiness

Source: AM-TEL EQUIPMENT CO.
6329-33 Hollywood Blvd., Los Angeles 28, Calif.

Tamper proof

Silent Sentry is a new wall mounting bracket on which to hang a carbon dioxide fire extinguisher. A weighing mechanism, sealed inside the housing, operates a signal on the sides of the housing to indicate if the extinguisher is full and ready for duty or if it has been partially or completely emptied.

The assembly includes a flanged collar clamp to secure permanently on the extinguisher. This clamp has wings that rest on the support bracket arm so the extinguisher can be picked up quickly to meet an emergency. An adjustment in the sealed housing permits correct setting for a given extinguisher. Four bracket sizes take extinguishers weighing 5, 10, 15 and 20 lb. when full.

If you write maker identify as IEN - 10362

LUBRICATING . . Drawing compound for press and drawbench application

Source: VAN STRAATEN CHEMICAL CO.
544-48 W. Washington St., Chicago 6, Ill.

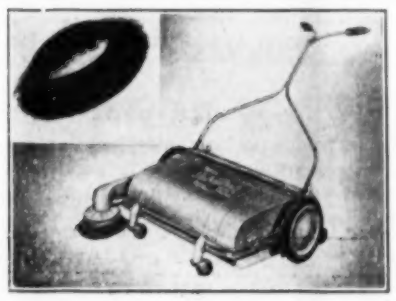
Technical data upon request

Vantrol 5481C is a new drawing compound for use on carbon steel, copper, stainless steel, in drawbench forming operations. It minimizes die breakage, material tearing and metal pick-up. It is one of several pigmented and non-pigmented compounds in the company's new line of drawing lubricants for light and heavy forming operations.

If you write maker identify as IEN - 10363

CLEANING . . Sweeping machine for floors, employs nylon brushes

Source: PARKER SWEEPER CO.
49-53 Bechtle St., Springfield 99, Ohio



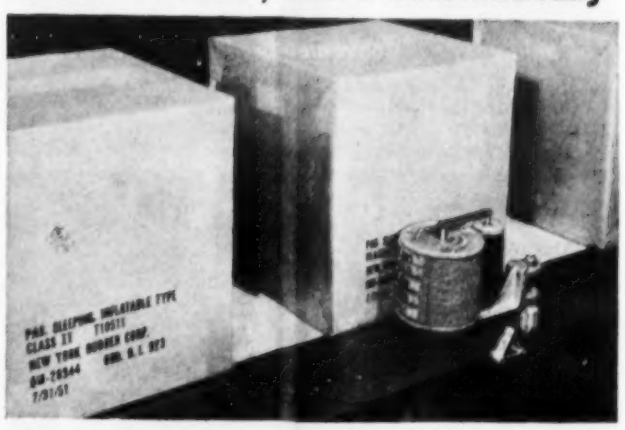
Hand and power design

Nylon brushes are now available as refills for the side wall brush head and for the cylindrical brush inside the main housing on all models of the company's floor sweeping machine, previously described IEN-12808-51. Refills of steel backed tampico brushes and three types of main fiber bristle brush will continue in availability for the 20 and 28-in. machines. The nylon brushes wear well in service and do a first class sweeping job.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10364

Low-cost conveyor attachment marks cartons, cases automatically



Save man-hours now used for manual marking. Attach a ROLACODER Imprinter to conveyor or case-sealer and eliminate the cost of stencilling or rubber-stamping. Get neater, cleaner, more accurate marking, too. Friction-operated, self-inking. Copy changes made in minutes. *Pays for itself in weeks.*

Write for ROLACODER brochure showing models to imprint top, sides of every kind of package.

ADOLPH GOTTSCHO, INC.
Hillside 5, N. J.

Gottscho

If you write maker identify as IEN - 10365

IF YOU PROCESS RUBBER

IN ANY SHAPE OR FORM

YOU'VE GOT DUST PROBLEMS FOR

ROTO-CLONE

Type N ROTO-CLONE used for collecting fine dust or stringy particles from rubber processing

Fine dust or stringy particles from the buffing, grinding or machining of hard or soft rubber are readily controlled by ROTO-CLONE. If it's dust generated by Banbury mixer or roll mill or from handling such materials as talc, carbon black, sterates, rosins, etc., ROTO-CLONE can do an equally effective collection job.

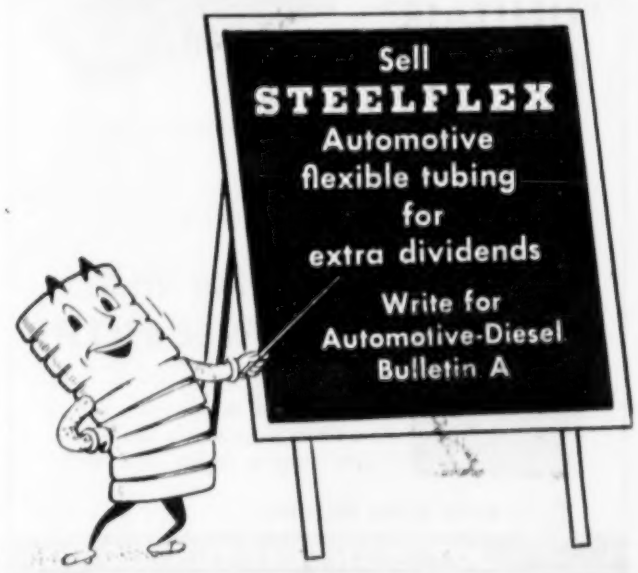
Write for Bulletin No. 277 describing the AAF Type N ROTO-CLONE — a compact, hydro-static precipitator for collecting all the above types of dust with highest efficiency.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN - 10366

IMMEDIATE SHIPMENT ON

UNIVERSAL STEELFLEX METAL TUBING



UNIVERSAL METAL HOSE CO.
2131 South Kedzie Ave. Chicago 23, Ill.

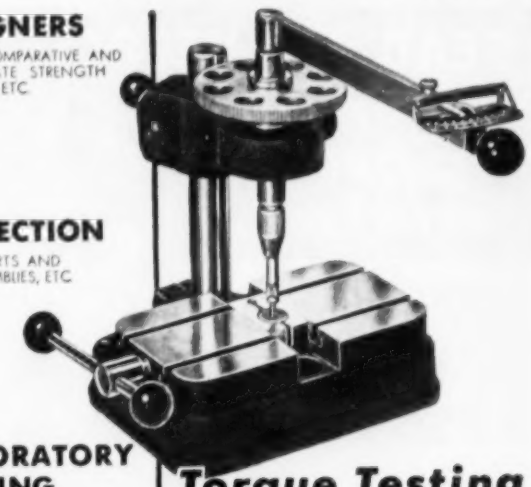
If you write maker identify as IEN - 10367

DESIGNERS for COMPARATIVE AND ULTIMATE STRENGTH TESTS, ETC.

INSPECTION of PARTS AND ASSEMBLIES, ETC.

LABORATORY TESTING of SCREWS, SOCKETS, TAPS, LOCK NUTS, DRIVING BITS, HAIR SPRINGS, ETC.

PRODUCTION QUALITY CONTROL for DELICATE OPERATIONS, ASSEMBLY OF FRAGILE MECHANISMS OR INSTRUMENTS; FOR FASTENERS IN PLASTICS AND LIGHT METALS.



Torque Testing FIXTURE

A universal fixture with 1000 uses. Holds driver in accurate alignment; in instrument bearings. Provides rapid engagement with test sample...torque is applied and measured with Sturtevant Torque Wrench.

Model TTF¼ Capacity 0-200 in. lbs.
Model TTF½ Capacity 0-150 ft. lbs.

Write for Bulletin TF

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 10368

MULTIPLE ASSEMBLIES FOR SMALL PARTS BELONG TO HORSE-AND-BUGGY DAYS

GRIES DIE CASTINGS GIVE YOU TINY PARTS LIKE THESE COMPLETE IN ONE OPERATION

Compare GRC small die castings with assemblies produced by other methods. GRC completely finished parts save you time, labor, money. Cast in one high-speed operation, they open broad opportunities for your new designs. Fast delivery on 100,000 pieces to many millions.

America's Foremost Producers of Tiny Die Castings

Smallness Unlimited
Max. Wt.: 1/2 oz.
Max. Lgth.: 1 3/4 in.

Write for bulletin and samples.
Send prints for quotations.

GRIES REPRODUCER CORP.
Manufacturers of Small Castings Exclusively
139 Beechwood Ave., New Rochelle, N. Y. • NEw Rochelle 3-8600

If you write maker identify as IEN - 10369

JOY WL-80 "UNITAIR"

the Compressor of 1000 uses
81 to 640 CFM

★ A size for *every* standard motor rating
★ Air cooled ... Two stage
★ Force-feed lubrication
★ Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

Consult a Joy Engineer W&D 15087

JOY MANUFACTURING CO.
General Offices, Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 10370

READ AIR VELOCITIES instantly... accurately... anywhere...

...WITH THE ALNOR VELOMETER

Alnor Velometer, a precision-built, self-contained, portable instrument, gives you instant, accurate readings of air velocities anywhere—in plants, mines, mills or laboratories. Measures speed of air flow through ducts, grilles, furnaces, spray booths or in the open. This rugged instrument needs no special care or delicate handling—anyone can use it and get accurate readings. Needs no calculations or reference charts. Available in a wide variety of scale ranges, and with a full assortment of jets and fittings for every application. You'll want full details and prices, so write for Bulletin 2448-G, Illinois Testing Laboratories, Inc., Room 517, 420 No. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

NEW LITERATURE—Continued

Identify as IEN - 0695

LOCKS . . What to look for in buying a padlock is the introductory section to new 12-page Bulletin H-8. It shows by diagram how four basic types of locking mechanism work. Following is catalog information on standard padlocks along with notes on suggested uses. Yale & Towne Mfg. Co., Lock & Hardware Div., 198-202 Henry St., Stamford, Conn.

Identify as IEN - 0696

LUBRICATING . . Centralized equipment to use on machine bearings meters the flow to each bearing. Color-coded drawings in new 20-page Bulletin 26 shows how the measuring valve works. Pictures show examples of applications. Farval Corp., 3293 E. 80th St., Cleveland 4, Ohio

Identify as IEN - 0697

MACHINERY . . Bending, drilling, grinding, sawing, shearing, threading, welding machines, also presses, air compressors, clamps, tools, cranes, most of them American made, in 64-page "Metal Working Machinery" Catalog 2-5. Julius Blum & Co., 653 Industrial Ave., Carlstadt, N. J.

Identify as IEN - 0698

MACHINERY . . Examples of special machines built by the company are shown in 12-page Catalog E-201. They include a machine to drill holes in acoustic tile, a meteor camera, a glass-container machine. Facilities are listed. Hartford Special Machinery Co., 297 Homestead Ave., Hartford 12, Conn.

Identify as IEN - 0699

METAL PARTS . . Miniature components made on Swiss automatic machines include pinions, gears, shafts, pivots, screws, cams. Bulletin, 4 pages. Research Development Manufacture Inc., 427-31 E. Collom St., Philadelphia 44, Pa.

Identify as IEN - 0700

FLOW METERS . . Porcelain, glass and metal designs for corrosive service. Catalog 32, 16 pages, gives capacities and dimensions, shows how new materials such as Teflon are used in the corrosion-resisting Florator construction. Fischer & Porter Co., 830 Jacksonville Road, Hatboro, Pa.

Identify as IEN - 0701

FLOW METERS . . Orifice-type Model-201 meters for steam, gases, liquids. How they operate, methods of connecting liquid seal chambers, mounting, checking and testing, orifice capacity charts, all in 28-page Bulletin 1050 Rev. 1. Rockwell Mfg. Co., 624 N. Lexington Ave., Pittsburgh 21, Pa.

Identify as IEN - 0702

MILLING CUTTERS . . 52-page pocket Condensed Catalog 2 on standard high-speed-steel milling cutters and end mill holders gives size tables and selection notes. Goddard & Goddard Co., 12282 Burt Road, Detroit 23, Mich.

Identify as IEN - 0703

ELECTRIC MOTORS . . DC units from 1/2 to 300 hp. and dc. generators from 3/4 to 250 kw. are reviewed as to electrical characteristics, adjustable-speed application and construction in 16-page Bulletin 1450. Louis Allis Co., 425-29 E. Steward St., Milwaukee 7, Wis.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10371

To Measure CAPACITANCE at RADIO Frequencies

Rapidly ☆ Conveniently ☆ Accurately

The Type 1612-A Capacitance Meter is used both in the laboratory and in production for rapid measurements of capacitance from 0 to 1200 μμf. It is very simple to use and can be operated by untrained personnel with a minimum of instruction.

Range: 0 to 80 μμf, and 0 to 1200 μμf, in two automatically-selected ranges
Accuracy: 0.4 or 4 μμf below 10 and 100 μμf and 4% above 10 and 100 μμf
Frequency: Fixed at 1 Mc
Detector: Internal crystal with microammeter
Power Supply: Built-in to operate from 115 volts, either 60-cycle a.c. or d.c.
Price: $170

Write for Complete Data

General Radio Company
275 Massachusetts Ave., Cambridge 39, Massachusetts
90 West Street, NEW YORK 6 — 920 South Michigan Avenue, CHICAGO 5 — 1000 North Seward Street, LOS ANGELES 38

If you write maker identify as IEN - 10372

Indus Wheels Solve Wheel Problems

Send for SPECIFICATIONS AND PRICE SHEETS FOR INDUSTRIAL AND JUVENILE WHEELS

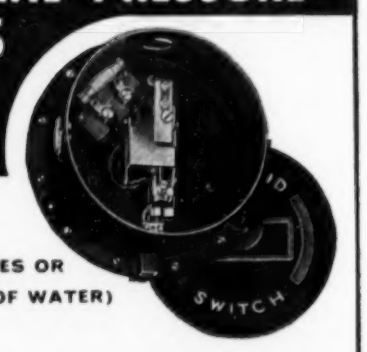
- Semi-Pneumatic, Pneumatic, or Solid Tires
- Tire Load Ratings to 925 pounds
- Wheel Sizes 2 1/2" to 16"
- Available with ball, roller or Grafoil bearings
- Baked enamel finish to customers' specifications

INDUS CORPORATION
1817 MADISON AVENUE
INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 10373

DIFFERENTIAL PRESSURE CONTROLS FOR LOW PRESSURES

MERCURY SWITCH EQUIPPED



FOR AIR OR GAS (INCHES OR FRACTION OF INCHES OF WATER)

TO OPEN OR CLOSE AN ELECTRICAL CIRCUIT ACCORDING TO A MINUTE CHANGE IN THE DIFFERENCE BETWEEN TWO PRESSURES OR VACUUMS

Mercoid Type PPQ Diaphragm Differential Pressure Controls operate from minute changes (.03" water) in the difference between two pressures.

Ranges to cover most applications (inches of water) 6" vacuum to 6" pressure, and 30" vacuum to 30" pressure. Available for various circuit arrangements.

Electrical Capacity—0.3Amp. at 115V., A.C. or 0.15 Amp., at 230V., D.C. Can be furnished in explosion-proof or weather-proof cases.

WRITE FOR BULLETIN CA-3P

THE MERCOID CORPORATION
4201 BELMONT AVE., CHICAGO 41, ILLINOIS, U.S.A.

If you write maker identify as IEN - 10374

IMPROVED QUALITY—LOWER COST

TURNABOUT®
ADJUST • A • FORK
HYDRAULIC LIFT TRUCK
with interchangeable forks

capacity 2500 lb.

As low as $350 for complete truck

INCLUDING CHOICE OF 30", 36", 40", 42", 48" FORKS

Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year Write for descriptive bulletin.

RACK HYDRAULIC EQUIPMENT CORPORATION
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE

If you write maker identify as IEN - 10375

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 10376

Handiest selector ever!

Simplifies your job; saves time, speeds choice of right fastener. Easy to read, easy to use, handsomely lithographed in red, white and blue. Shows various tubular and split rivets, part catalog number, normal clinch allowance, size of clearance hole in work and other details to aid your product manufacturing. Sturdily riveted together for lasting use.

Write for yours today!

EST. 1919
MILFORD

The name to *RIVET* in your memory for fasteners.

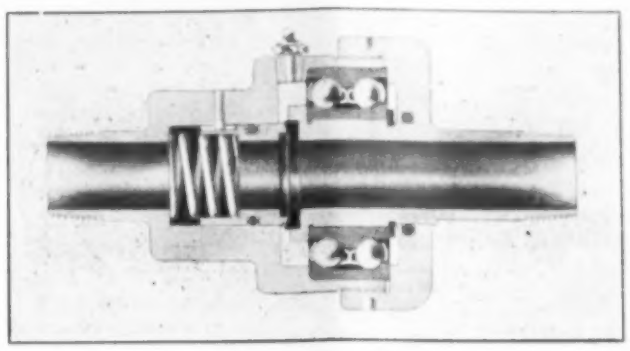
THE MILFORD RIVET & MACHINE COMPANY

927 Bridgeport Avenue, Milford, Conn.
876 Illinois Avenue, Aurora, Ill.
1156 W. River Street, Elyria, Ohio
76 Platt Street, Hatboro, Penn.
751 So. Palm Avenue, Alhambra, Calif.

If you write maker identify as IEN - 10378

PIPE FITTING . . Rotary joint for stationary to rotating connection

Source: ANCO INCORPORATED
3 Baker St., Providence 5, R. I.



Self-aligning design

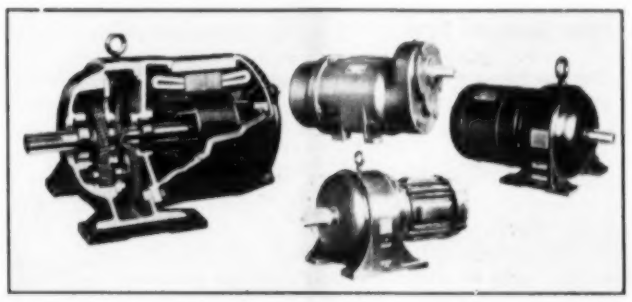
Rotating sleeve in this new high pressure hydraulic rotary joint is carried by a double row ball bearing in the stationary body. A self-lubricating carbon seal ring, on the inner end of the sleeve, rides in self-aligning action against the matching end of a non-rotating spring backed ring sealed piston. Inlet connection is integral with the body and extends to the left.

The joint will handle hydraulic pressure to 3,500 pounds. It is available in ¼ to 5-in. pipe sizes. The design has been tested in long periods of high speed rotating services to show that maintenance is negligible. It is a companion to the low-pressure plain bearing unit previously described IEN-9002-53.

If you write maker identify as IEN - 10379

MOTOR . . Geared head design, one to triple reduction, 1 to 150 hp.

Source: ELLIOTT COMPANY
49 Kealey St., Jeannette, Pa.



To meet specific requirements

New line of geared head motors includes single, double or triple speed reduction with head assemblies on any of the Crocker Wheeler motors in squirrel cage or wound rotor ac. or multiple speed dc. design. The motor can be open-protected, splash-proof, totally enclosed non-ventilated or totally enclosed fan cooled and explosion proof. Mounting can be horizontal on the floor or ceiling, on a wall or inclined. An integral power unit, with disc brake, is available also.

Construction employs an oil seal between the gears and the high speed bearing on the motor shaft. An oil reservoir provides splash lubrication for the hardened gears. Single reduction units range from 780 to 280 rpm. in output speed. Double reduction ranges from 230 to 45 rpm. and triple reduction from 37 to 7.5 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10380

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

BELLOWS FOR FLEXIBLE PIPING . . . provide for thermal expansion, simplify alignment, permit flexing of pipes or ducts.

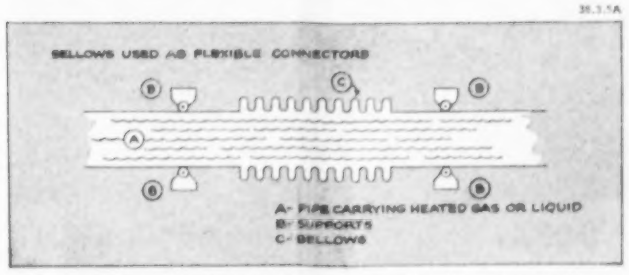


Diagram shows how bellows device allows for thermal expansion of pipe without undue strain on support

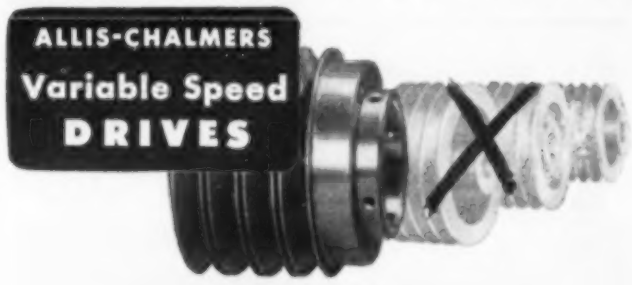
Clifford Hydron Bellows bring new versatility to piping and duct systems. Where heated fluids would expand and buckle ordinary piping, the expansion or contraction of the leakproof flexible bellows compensates for dimensional changes. This flexibility also permits side-wise movement of supports with respect to one another.

Another use for bellows flexible joints is in hot air de-icing ducts in aircraft where wing-flexing requires equivalent flexing of the ducts. Other flexible joints for tubing in hydraulic or fuel lines simplify alignment problems during assembly and provide for thermal expansion as well. Clifford stainless steel bellows are available for flexible joints of any diameter from $\frac{1}{4}$" to $26\frac{3}{8}$" and serve best where strength, flexibility, corrosion-resistance and leakproof sealing are vital. Clifford is glad to provide "bellows-engineering" help.

Write for bulletin: "What To Consider When Selecting Metallic Bellows."

CLIFFORD MANUFACTURING COMPANY,
146 Grove St., Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as IEN - 10381



LET ONE SHEAVE DO THE JOB OF 2 or 3!

WHY DISMANTLE DRIVES AND CHANGE SHEAVES every time you want to change speeds? Get the speed you need with one *Vari-Pitch* sheave. It has a number of important advantages:

- Provides infinite number of speeds.
- Speed will not change once it is set.
- Costs less than other methods of speed changing.

Allis-Chalmers offers all the equipment and engineering needed for the complete *Texrope* drive, including sheaves, belts, motors, starters, and motor bases — all from one reliable source, backed by nation-wide service.

Call your nearby Allis-Chalmers district office or distributor, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4116

Texrope and Vari-Pitch are Allis-Chalmers trademarks.

ALLIS-CHALMERS

If you write maker identify as IEN - 10382

Yes, it's many furnaces in one. It's designed not only for carbonitriding . . but also for hardening, carburizing, annealing, and carbon restoration. It's self-contained . . it's easy to maintain!

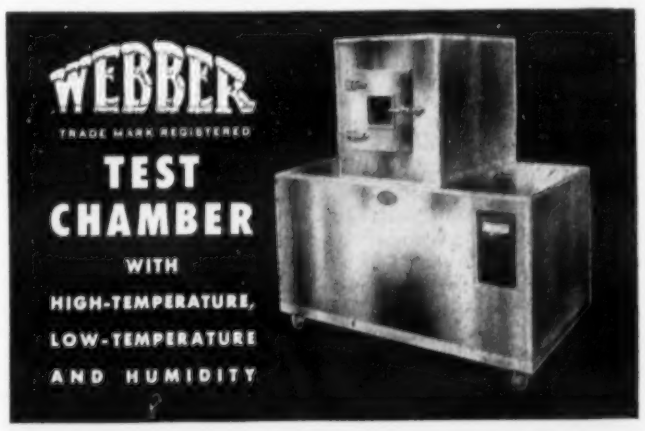
Heating is by new type, gas-fired, vertical radiant tubes. They weigh only 29 pounds each, can be changed in two minutes, and usually last two or three times longer than old conventional type radiant tubes.

Ask for Bulletin No. 241

LINDBERG FURNACES

Lindberg Engineering Company • 2491 West Hubbard Street • Chicago 12, Ill.

If you write maker identify as IEN - 10363



★ This Webber test unit, designed for production and experimental testing, has a temperature range from +250°F., to −100°F. The pull-down to −100°F., is achieved in 45 minutes, and can be cycled from −100°F., to +250°F., in 30 minutes. 95% relative humidity is provided at temperatures between 75°F., and 95°F. Vacuum equipment can be added to simulate high altitudes. The test chamber, provided with a moisture proof light for illumination, is 4½ cubic feet, 20 inches high, 20 inches wide, 20 inches deep. High and low temperatures are governed by a temperature controller with scale range from −200°F., to +400°F., with a 3 degree control point differential, 1½ degrees plus and minus. The humidity is regulated by a wet and dry bulb controller. Unit size is 60" long, 45" wide, 74" high. Apertures in left side of cabinet provide for electrical cables to energize equipment being tested. Webber offers a complete line of test units for various applications.

Write for more complete information

INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 10384

NOW!

A SAFE, FAST PRODUCTION VISE

SAFE—Both Hands Free To Guide Work

Studebaker Hydraulic SPEEDVISE

For fast and accurate production • Pressures to 7½ tons obtained with easy strokes on a foot operator • Ideal for operations such as assembling, forming, punching, presswork, cutting, straightening and bending — all vise jobs.

Write for bulletin No. 54

Studebaker MACHINE COMPANY

1235 South Ninth Avenue • Maywood, Illinois

If you write maker identify as IEN - 10385

SAFE ARRIVAL—They used WESTCOAT-CLEAR TRANSPARENT Strip Coating

Shipments arrive at destination free from rust, corrosion, abrasion, contamination and tampering when *sealed in* WESTCOAT-CLEAR 202. It's the new quick-dip fast-setting coating that saves money, time and cuts costs. WESTCOAT's transparency makes all product identification easy . . . at all times . . . in all kinds of weather. It's extremely tough, gives positive protection; coated parts withstand 1,000 hours, 100° relative humidity at 100° F without rusting. Easy depreservation—slit coating, peel and part is ready for use. WESTCOAT is economical—remelt and reuse over and over.

Find out how WESTCOAT-CLEAR 202 can eliminate your packaging headaches—simplifies shipments and storage of spare parts, gauges and tools—saves time and money. Spend pennies and save dollars.

WESTERN COATING COMPANY

Eastern Plant—P. O. Box 227, Elyria, Ohio
Western Plant—85 West Union Street, Pasadena 1, California
Representatives in principal cities

PROTECT WITH WESTCOAT

SEND COUPON TODAY FOR WESTERN COATING LITERATURE

NAME & COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

NEW LITERATURE—Continued

Identify as IEN - 0704

PIPE FITTINGS . . Weldolet and Thredolet 90-deg. branch pipe fittings for weld application. Installation instructions, engineering requirements, tables of sizes and list prices in revised 32-page Booklet W-3, copyright 1951. Bonney Forge & Tool Works, 721 Meadow St., Allentown, Pa.

Identify as IEN - 0705

PLASTICS . . Teflon products including tube, rod, sheet, shaved tape. Bulletin, "Teflon", contains 8 pages of dimensional tables and data on the Dupont plastic. Ethylene Chemical Corp., 243-47 Broad St., Summit, N. J.

Identify as IEN - 0706

PLASTICS . . Phenolic casting resins are described in 90-page "Marblette Manual" which tells how to select them, mold preparation, melting and pouring, machining, finishing, fabricating. Applications include pantograph dies, jigs and fixtures, foundry patterns. Marblette Corp., 37-23 30th St., Long Island City 1, N. Y.

Identify as IEN - 0707

PLASTICS . . Combination materials of Thiokol liquid polymers and epoxy resins range from elastomers to hard resins for potting, casting, adhesives, sealers, coatings. Six-sheet file folder, "Thiokol-Epoxy". Thiokol Chemical Corp., 778-82 N. Clinton Ave., Trenton 7, N. J.

Identify as IEN - 0708

PLASTICS . . Kralastic molding material is a resin-rubber blend that is both tough and rigid. Applications include pipe, protective helmets, lawnmower wheels. Properties, molding instructions in a 20-page Bulletin NC-53-4. U. S. Rubber Co., 1230-32 Sixth Ave., New York 20, N. Y.

Identify as IEN - 0709

PROCESSING . . Production-type equipment to clean metal parts, spray paint, do metal treating, baking, drying, dust collecting, fog filtering. Picture summary in 12-page Catalog A-654 shows combinations of equipment possible. R. C. Mahon Co., P. O. Box 4666-A, Detroit 34, Mich.

Identify as IEN - 0710

PULVERIZING . . Roller-type jar mills in single and multiple design, also ball mills, drum rollers to mix contents in supplier's drums without opening, drum and pail tumblers, grinding and pulverizing media. Bulletin 270, 20 pages. United States Stoneware Co., Box 350-A, Akron 9, Ohio

Identify as IEN - 0711

PUMP CONTROL . . Flow meter, control and valve act to recirculate part of discharge of a high-capacity boiler-feed centrifugal pump during low load operation and thus prevent trouble. Reasons why in 8-page Bulletin S-53. Republic Flow Meters Co., 2244 Diversey, Chicago 47, Ill.

Identify as IEN - 0712

CENTRIFUGAL PUMP . . Process pump handles corrosive and abrasive liquids at temperatures to 250 deg. F., heads to 260 ft., capacities from 20 to 1,300 gpm. in five sizes. Size chart in 8-page Bulletin 52-B-6615C. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10387

For more efficient . . . LIQUID HANDLING

USE... BOWSER XACTO...

the world's most widely used meter!

If you measure liquids, you need Bowser XACTO meters. Many hundreds of users — handling hundreds of different liquids — have found it to be the easiest, most efficient, accurate and dependable method of control they have ever used. XACTO can do the same for you!

Push-button operation delivers predetermined quantities . . . eliminates guesswork . . . will even print a delivery ticket when desired.

Write TODAY for full facts on XACTO!

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

REGIONAL OFFICES: ATLANTA • CLEVELAND • DALLAS FORT WAYNE • KANSAS CITY • NEW YORK • SAN FRANCISCO • WASHINGTON, D. C. • HAMILTON, ONT.

If you write maker identify as IEN - 10388

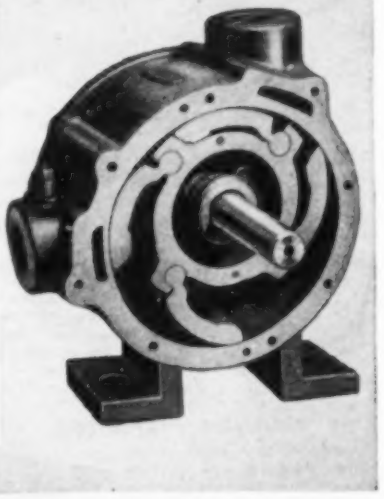
If the equipment you design calls for 29.9" of vacuum or 25 psi pressure

READ what your prospects say about LEIMAN Pumps

"Never wear out."

"In almost continuous operation, 24 hours a day for 21 years. Absolutely reliable."

"Requires practically no maintenance care."



Wings in this Leiman Pump take up their own wear, year after year, and always maintain contact with cylinder wall. *See our Listing in Sweet's Product Design File*

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

LEIMAN BROS., INC.
166 Christie Street Newark 5, N. J.

If you write maker identify as IEN - 10389

Fast-Flo DRUM PUMP

HANDLES HUNDREDS OF DIFFERENT FLUIDS!

WORKS DOZENS OF WAYS!

Handiest piece of equipment in the plant! That's what they say at scores of plants where this Fast-Flo Drum Pump is used. It's a really versatile worker . . . has dozens of specific uses. Here are just a few ways it will work for you:

- For transferring fluids cleanly and safely from upright original drums.
- For supplying or adding fluids to production lines, direct from original drums.
- For agitation and mixing in closed drums.
- For injecting fluids such as cutting oil at high pressure.
- For intermittent spraying of lacquers, varnishes and other light coatings.

Fast-Flo is surprisingly low in cost . . . air-operated . . . easy to handle . . . and *rugged!* You get double-action, high volume, controlled delivery, wherever you use it.

Write today for the new Fast-Flo Idea Book which tells you where and how this pump can save you money.

GRAY COMPANY, INC.
91 Grace Square, Minneapolis 13, Minn.

GRACO Fast-Flo DRUM PUMP

Regional Offices: New York, Philadelphia, Detroit, Atlanta, Chicago, San Francisco

If you write maker identify as IEN - 10390

ILLINOIS STEAM SPECIALTIES

Replace Obsolete Steam-Wasting Units With Illinois Specialties

Equip your radiators with smooth-acting Illinois Supply Valves and sensitive, steam tight Illinois Thermo Traps.

Improve system operation by replacing thermostatic drip traps with Illinois Float and Thermostatic Traps wherever rapid elimination of condensate is essential.

Illinois Float and Thermostatic Traps are made in three Series to meet a wide variety of applications and for operating ranges from 50 pounds pressure to 25 inches vacuum.

Investigate! Compare! Try Illinois Traps on your worst service and be guided by results!

Write for Bulletins

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

If you write maker identify as **IEN - 10391**

"M" SERIES pilot-operated Skinner Valves have extremely fast action, and large capacity on air, inert gas and liquid applications. All internal metal parts are stainless steel or brass. Soft seals prevent leakage — operate in any position — rubber coated, nylon fabric diaphragm for long life — port size ½" or ⅜", orifice ⅜" — power consumption, 10 watts — continuous duty.

M2 is two-way, normally closed, 5 to 150 p. s. i., weight 3 lbs. **M3** is three-way, normally closed, normally open, or directional flow, 20 to 150 p.s.i., weight 3¾ lbs.

Write for Bulletins No. 493 & 494

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Avenue • New Britain, Connecticut

If you write maker identify as **IEN - 10392**

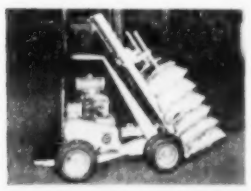
MODEL 301 XPEDITER with 18" Forks, Hydraulic tilt and lift of 16".

OPERATES WHERE LARGER HANDLING EQUIPMENT CANNOT

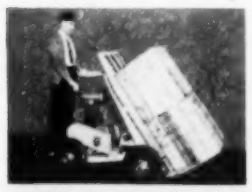
...brought to you by KALAMAZOO
. . . 70 years' service to railroads and industry

. . . transports boxes, bags, barrels, other materials . . . 7 models to suit your needs, weighing from 715 to 1025 pounds.

MODEL 201 XPEDITER for handling barrels. Hydraulic tilt.



MODEL 302 XPEDITER for handling bags. Hydraulic lift and tilt.



MODEL 303 XPEDITER for handling fruit, produce. Hydraulic tilt and clamp.

Here's the materials handling machine you've been looking for! KALAMAZOO *Xpediter* speeds handling, cuts costs in crowded areas, on light floors, in elevators . . . extends advantages of mechanical handling into every corner of your plant or warehouse. Available with either manual or hydraulic controls, Instantaneous forward-to-reverse travel without shifting gears. Simple, convenient controls, pneumatic tires, rugged construction. Xpediter's maneuverability and versatility makes it an important adjunct to your present handling equipment.

FOR FULL XPEDITER DETAILS, send for Bulletin XP-2. Also get data on Kalamazoo Model 2500 Speed Truck, Kalamazoo Model 3600 Tractor, Kal-Truk for handling bulk materials on construction jobs and in plants.

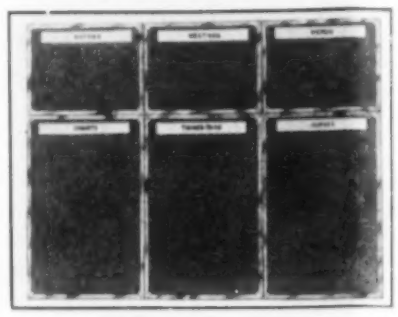
KALAMAZOO MEANS SERVICE TO YOU · MANUFACTURING SINCE 1882

KALAMAZOO MANUFACTURING COMPANY
KALAMAZOO, MICH., U.S.A.

If you write maker identify as **IEN - 10394**

SIGNALING . . Bulletin board, flush frames, self-sealing surface

Source: BURRELL CORPORATION
2221-25 Fifth Ave., Pittsburgh 19, Pa.



Combined or single

The company announces its appointment as exclusive national distributor for the Modern Display line of bulletin boards in which green self-sealing surfaces are assembled in flush frames made of anodized aluminum. Two available sizes measure 18 by 24 in. and 24 by 36 inches. The boards are packed in individual cartons with six or twelve to a master carton.

If you write maker identify as **IEN - 10395**

SWITCH . . Rotary design with printed circuit, has 60 positions

Source: SHALLCROSS MFG. CO.
8-12 Jackson Ave., Collingdale, Pa.

Light weight

Silver and rhodium-plated copper contacts are printed on a phenolic panel in manufacture of this new switch. Connections are made through eyelet terminals soldered into the printed circuit. The central shaft is isolated design. The 3 by 3-in. panel mounts on spacers so a number of the single-pole assemblies can be ganged. The contacts "make" before "break". A detent can be specified.

If you write maker identify as **IEN - 10396**

ROOFS . . Fiberglas mop to spread hot asphalt and pitch

Source: OWENS-CORNING FIBERGLAS CORP.
100 Nicholas Bldg., Toledo 1, Ohio

Good for 10 to 20 days

The glass yarn in this new mop will withstand temperature to 1,000 deg. F. Hot asphalt or pitch will not char it and will flow freely from it for a smooth even spread. The yarn is made in skeins measuring 24, 28, 32 and 36 in. in length. The company recommends four long skeins and two short skeins in a mop. The glass will not decay and can be cleaned easily.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10397**

A PAID NEWS ADVERTISEMENT BY JABSCO PUMP CO.

NEW JABSCO PORTABLE SELF-PRIMING MOTOR-PUMP UNIT

Weighs only 29 lbs.
List Price $58.50

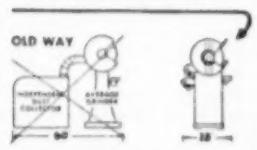
Jabsco announces the immediate availability of the outstanding Model 2187 Portable Motor-Pump Unit, *with capacity of 600 GPH at 10' head.* Satisfied users find this versatile unit solves many pumping needs in industrial, farming, plumbing and marine uses. Model 2187 pumps coolants, circulates and transfers liquids, returns spilled liquids to process, drains cellars and sumps, pumps waste water to sewer, pumps out flooded basements, cesspools, and many other vital uses. Model 2187 is equipped with a close-coupled Jabsco bronze Pump with mechanical seal. Ports are threaded for standard ¾" external garden hose connections, with ½" IPS optional upon request. Heavy duty capacitor type ¼ HP Wagner electric motor with overload protector powers the unit. Motor is rated at 1725 RPM, 60 cycles—115 volts A.C. Comes with 6 ft. cord with ground wire and plug. Form-fitting handle folds away for easy storage. Also available at additional cost, D.C. motor units, 32 volt and 110 volt. Model 2187 is ready for instant use, and requires no additional equipment. No lubrication is required, no contamination of liquid pumped. Instantly self-priming with dry suction lifts to 15', up to 25' primed. For complete information, write **Jabsco Pump Company**, 2031 North Lincoln Street, Burbank, California.

If you write maker identify as **IEN - 10398**

Hammond of KALAMAZOO

2 IN 1 NO-DUST GRINDER

SAVE OVER 50% FLOOR SPACE THE HAMMOND WAY



DUST-LADEN AIR IS A MENACE!
- Protect your employees' health.
- Protect nearby machine tools from dust and grit.
- Save floor space — requires only 6½ square feet.

For 10", 12", and 14" wheels.
Write for Catalog.

Hammond Machinery Builders Inc.
1807 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

If you write maker identify as **IEN - 10399**

HERE'S WHY

PRESTOWELD
Trade-Mark

BLOWPIPES *COST SO LITTLE TO USE AND MAINTAIN*

SELF-SEATING VALVES
Reseat scored valves when turned tight.

RUGGED HANDLE ASSEMBLY
Built for long, trouble-free service.

SLIP-FIT "O" RINGS
Perfect gas seals every time.

MIXER IN EACH HEAD
Resists backfires, eliminates burnouts.

SWAGED, PURE COPPER TIPS
Heads snap in handle. No wrench needed.

The PREST-O-WELD W-122 blowpipe (illustrated) is available with 13 standard welding heads and 3 multiflame heating heads, all of the snap-in type. Ask your LINDE jobber for a demonstration or write for further information. LINDE AIR PRODUCTS COMPANY, a Division of Union Carbide and Carbon Corporation, 30 E. 42nd St., New York 17, N. Y.

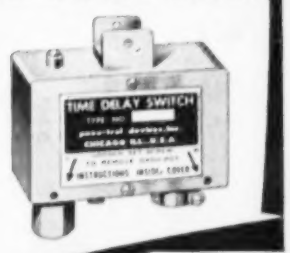
get it from your LINDE jobber

The terms "Linde" and "Prest-O-Weld" are registered trade-marks of Union Carbide and Carbon Corporation.

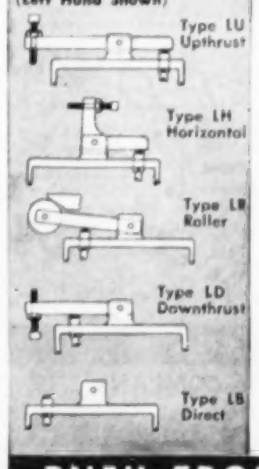
If you write maker identify as **IEN - 10400**

NEW CYLINDER TIME DELAY CONTROL SWITCH

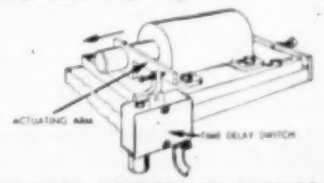
INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER



For Any Type Actuation Left or Right Hand (Left Hand Shown)



Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between ¼ and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed — a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, metal-cutting, etc. Ideal for automatic feeders.
Dimensions: 4⅛" wide; 2⅞" high; 1-7/16" deep. Overall height 4⅛".



SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

Write for descriptive literature and complete details.

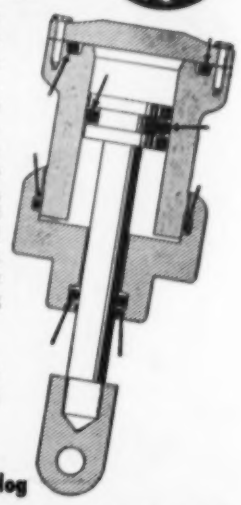
PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 10401

O-RINGS by INJECTION MOLDING

Dependable Hydraulic Seals

Minnesota O-Rings function in air or gas systems as well as in hydraulic systems. Air cylinders . . . hydraulic valves . . . hoisting mechanisms . . . water pumps . . . bottling machines . . . refrigerators . . . motors . . . lubricators . . . are a few of their uses. Minnesota's exclusive injection process makes possible very close dimensions, uniformity in mass production and downright economy. We use special compounds of synthetic rubber to meet your exact requirements. Let us quote on your next hydraulic packing installation.



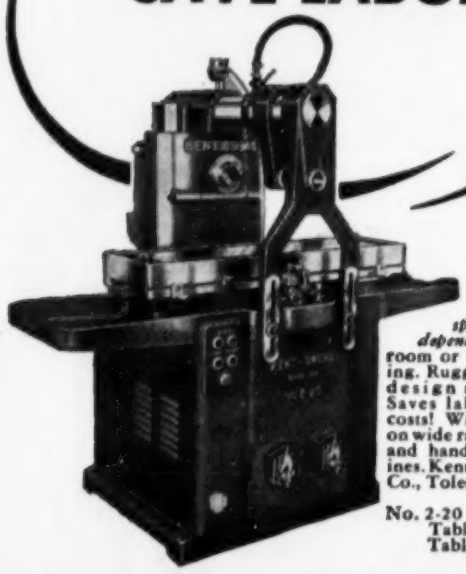
Manufacturers of all types of small rubber parts

Write for O-Ring Catalog

MINNESOTA RUBBER & GASKET CO.
3630 WOODDALE AVE., MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 10402

MILL IT *faster..* SAVE LABOR!



Kent-Owens advanced features mean *speed, accuracy* and *dependability*... in tool room or production milling. Rugged . . . simple in design and operation. Saves labor . . . reduces costs! Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machine Co., Toledo, Ohio.

No. 2-20 Milling Machine
Table, 42" x 12"
Table travel, 20"

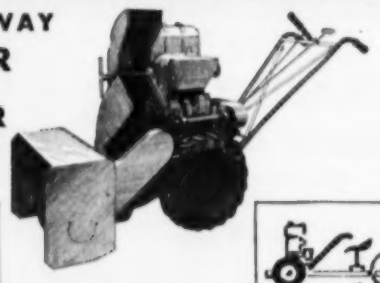
KENT-OWENS

Milling Machines

If you write maker identify as IEN - 10403

MAXIM SNOW THROWERS

PAY THEIR WAY
WINTER
AND
SUMMER



3-Gang 72" Mower

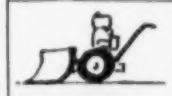
37" Rotary Mower

42" Rotary Brush

WHY WAIT FOR SNOW TO FLY

Now you can use a powerful 7.5 h.p. Maxim Snow Thrower all year long . . . in the winter for the most efficient snow removal you ever saw . . . in the summer for mowing, rolling, grading, hauling, or brushing. Conversion quick and easy.

900 Lb. Lawn Roller


42" Grader or Snow Blade

½ Ton Dump Trailer

WRITE FOR DETAILS

THE MAXIM SILENCER COMPANY
Dept. TW, 71 Homestead Ave., Hartford 1, Connecticut

Name_____
Address_____

2MT53

NEW LITERATURE—Continued

Identify as IEN - 0713

ROTARY PUMPS . . Small mechanical-seal unit for non-corrosive liquids rates ⅛ to 6 gpm. and pressures to 600 lb. Performance curves, a selection chart and notes on modifications in 12-page Catalog 101, Model L Series. Tuthill Pump Co., 937-41 E. 95th St., Chicago 19, Ill.

Identify as IEN - 0714

RELAY . . Type-IJF relay protects a circuit against underfrequency or overfrequency. Description of how it operates, time-frequency curves, standard ratings, and an internal connection diagram in 4-page Bulletin GEA-2013-C. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

Identify as IEN - 0715

RESISTORS . . Non-linear type for voltage regulation, contact and meter protection, signal clipping. Bulletin SR-3, 6 pages, graphs voltage-current characteristics on these varistors, application circuits. International Resistance Co., 407 N. Broad St., Philadelphia 8, Pa.

Identify as IEN - 0716

RIVETS . . Fluid-Tight jacketed and head-sealing aluminum rivets for tanks, pontoons, aircraft use soft aluminum as the sealing medium in combination with strong aluminum in the fastener itself. Installation instructions, tools, removal instruction in 4-page Catalog PI-2. Patushin Industries Inc., 503 N. Prairie Ave., Hawthorne, Calif.

Identify as IEN - 0717

SEPARATING . . Internal downflow separator to remove entrainment for vapors, steam, air, gas. Pick the required size from a two-page selection chart in 4-page Bulletin 401. V. D. Anderson Co., 1931 W. 96th St., Cleveland 2, Ohio

Identify as IEN - 0718

SHEARING . . Automatic machine to shear continuous web materials such as paper, plastic, cloth, into uniform sheet sizes at 6 to 100 fpm. It uses an electronic counter as part of the control. Details in 4-page Form 201. Hobbs Mfg. Co., 46 Salisbury St., Dept. N-8, Worcester 5, Mass.

Identify as IEN - 0719

SIGNALING . . Electronic metal detector to inspect products and packages for tramp metal. Four-page bulletin describes models, tells about applications in which presence of metal particles indicated unsuspected trouble. E. W. Brilmayer Laboratories, 84-88 Fulton St., New York 38, N. Y.

Identify as IEN - 0720

SIGNALING . . Materials-level indicator for a bin has a motor-driven paddle. When material rises to stop paddle rotation, a switch trips to indicate level has been attained. Bulletin, "Bin-Vue", 4 pages. Convair Corp., 714 Brookline Blvd., Pittsburgh 34, Pa.

Identify as IEN - 0721

SPEED REDUCERS . . Picture book shows 93 applications of the company's doubleenveloping worm gearing in industries from aircraft to wire making. Standard units rate to 800 hp. Ask for 36-page Bulletin CD-173. Cone-Drive Gears, 7169-73 E. McNichols Rd., Detroit 12, Mich.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10404

USE JOMAC®

INDUSTRIAL WORK GLOVES

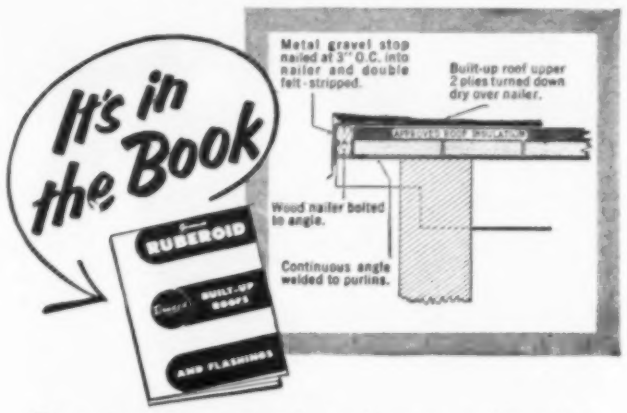
For better hand protection. Jomacs will increase production by helping to reduce injuries in your plant. Made of Jomac Cloth—the famous thick, twisted loop pile fabric.

Write for our new illustrated catalog

WASHABLE • FLEXIBLE • INTERCHANGEABLE • RESIST CUTTING, PROTECT AGAINST HEAT AND COLD

C. WALKER JONES CO., PHILADELPHIA 38, PA.
Plants in Philadelphia, Pennsylvania and Warsaw, Indiana

If you write maker identify as IEN - 10405



The answer to all your roofing maintenance problems is in Ruberoid's Built-Up Roofing Specification Book. There's a complete specification with detail drawings, like the one above, to meet every condition—Smooth Surfaced Asbestos, Coal Tar Pitch or Special Bitumen with gravel or slag surfacing, and smooth or gravel-and-slag surfaced asphalt.

Because Ruberoid makes *every type* of built-up roof, Ruberoid roofers are not prejudiced in favor of any one type. Because Ruberoid has been a leader in the field for 60 years, you can depend on the right materials and the right specification through Ruberoid Approved Roofers.

Give your roof a thorough check-up now, *and write for Ruberoid's free Built-Up Roofing Specification Book. The Ruberoid Co., 500 Fifth Avenue, New York 36, N. Y.*

The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as IEN - 10406

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880. **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

3000-lb capacity

Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 10407

IMPERIAL *Tubing Tools*

. . . The Tools that Experts Depend on for Faster and Better Work

HI-DUTY TUBE CUTTER

Free wheeling ball bearing action. Roller type with flare cut-off groove. Retractable reamer. **No. 274-F** for ⅛" to 1" tubing. Other models. Also saw-ing vises.

FLARING TOOLS

All types, for making 45°, 37° and double flares . . . on copper, aluminum, steel and stainless steel tubing. **No. 500-F** Flaring Tool, illustrated, makes 45° flares and then burnishes them.

TUBE BENDERS

Lever-type, gear-type and spring-type benders for bending all kinds of tubing. Illustrated is **No. 364-F** individual lever-type bender. Also models that take a wide range of sizes.

See Your Supply House
Ask for Catalog No. 3011

THE IMPERIAL BRASS MFG. CO., 5'8 S. Racine, Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL Pioneers in Tube Fittings and Tube Working Tools

If you write maker identify as IEN - 10408

GET THIS GUIDE *to Standard or Special* NAYLOR FABRICATED FITTINGS

This handy Naylor Bulletin No. 525 offers helpful information on standard fittings for lightweight pipe and facts on special fabrications built accurately to your specifications. Sizes range from 3" to 44" in diameter and wall thicknesses up to ⅜". All types of materials. Write for your copy of No. 525 today.

NAYLOR PIPE COMPANY

1235 E. 92nd Street, Chicago 19, Illinois

New York Office: 350 Madison Ave., New York 17, N.Y.

If you write maker identify as IEN - 10409

to rotate sludge rakes at exacting speeds in Process Clarifiers

WINSMITH SPEED REDUCERS

Under varying sludge loads, rake arms of this Process Clarifier sweep the 100 ft. diameter settling basin at speeds most ideal for sewage and water treatment. Lineal velocity of 10 ft. per minute must not be exceeded. Centered in the drive mechanism, powered by a 3/4 hp motor, a Winsmith Differential Gear Speed Reducer rotates the rakes at a consistent 1/30 rpm.

"The Winsmith unit was selected primarily for its high available reductions within a compact case... quiet operation, reliability," says Process Engineers, Inc. "Some of our installations . . . have been operating continuously over the last four years without shutdown for other than normal maintenance."

Rugged dependability and compactness have led numerous manufacturers to think of Winsmith *first* when they *first* think of speed reducers. It's the most complete, fully standardized line of worm, helical and differential units within the range of 1/100 to 85 hp.

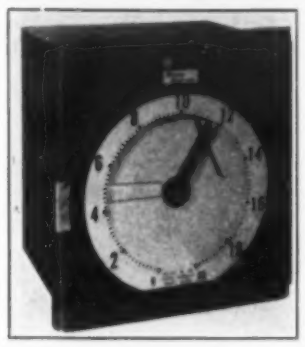
Request Catalog 148 for details.

WINSMITH, INC.
10 DAVIS ST.
Springville (Erie County), N. Y.

If you write maker identify as IEN - 10411

RECORDING . . Electronic instrument for an electrically impulsed variable

Source: THERMO ELECTRIC CO.
22-04 Raphael St., Fair Lawn, N. J.



Three years on test

Temperature can be recorded by this new instrument in a number of ranges between minus 100 and plus 3,000 deg. F. It also can be applied to record changes in humidity, solution conductivity, speed, pH, direct current or voltage, power, strain, or other measurement that can be converted to a change of resistance or dc. millivoltage. The record is made on a 12-in. circular chart. Indication is provided also on a circular dial by means of a rotating pointer.

The instrument employs the same null balance measuring circuit that has been developed for the company's electronic signaling controllers. The potentiometer recorder employs a high resistance circuit to permit the use of a mercury cell battery. The bridge type recorder is energized by ac. from the power supply.

Accuracy is within 0.25 of full scale. Sensitivity is about 0.05 of full scale. Balancing drive is continuous and standard balancing speed is 4 sec. of full scale. Accuracy and sensitivity are not affected by ordinary mechanical shock or electric interference. A cam follower, in connection with the pen arm, permits use of linear charts. Rollers and ball bearings are employed on the slide wire and pointer shafts. Drive gears and cam rollers are made of nylon.

If you write maker identify as IEN - 10412

EXTINGUISHING . . Three quart unit holds pressurized carbon tetrachloride

Source: STANDARD SAFETY PRODUCTS CO.
P. O. Box 2111-A, Lansing 11, Mich.

Heat starts it

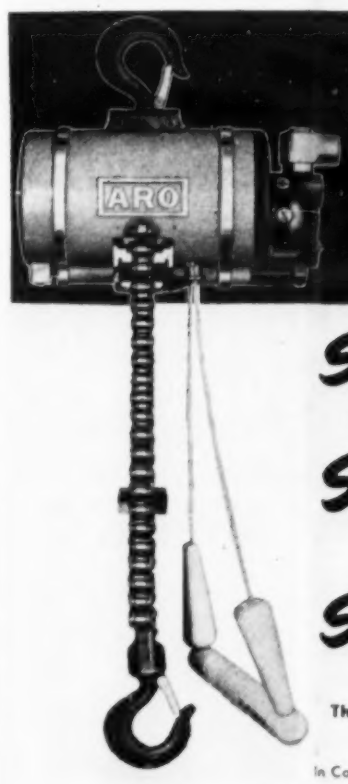
Model 165F is a recently improved assembly of the Firetox extinguisher, previously described IEN-822-34. Its three-quart aluminum container suspends from a ceiling by means of a bracket supplied for this purpose. It holds two quarts of carbon tetrachloride and 12 oz. of ammonium hydroxide, to act as the pressurizing medium when the fuse link melts. This occurs at 165 deg. F. The fire smothering blanket of vapor is spread by the sprinkler head located above the upward pointing nozzle.

The extinguisher is not subject to freezing. It will protect a confined area measuring 10 by 12 ft. per unit. The vapor is non-toxic and is safe to use against electrical and flammable liquid fires. It will not stain draperies. The housing can be refilled at the factory.

Recent improvements include a new nozzle assembly, made of stainless steel, that cannot corrode, pressurizing increased by 75 per cent to provide 70 lb. at 160 deg. F. The unit is inspected and labeled by Underwriters' Laboratories Inc.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10413



ARO 1000 pound AIR HOIST

SPEED... Lift rate . . . over 40 ft. per minute!

SIZE... Overall length 10¼" weighs only 28½ lbs.

SAFETY... Betters all safety requirements!

Write for full details.
The Aro Equipment Corporation
Bryan, Ohio
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd. Toronto, Ont.

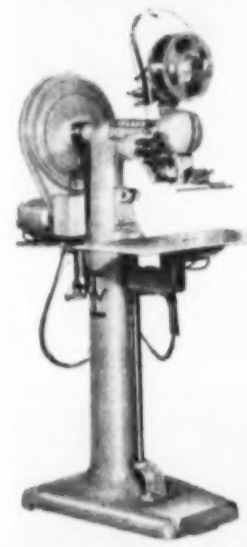
ARO AIR HOIST

Also . . . Air Tools . . . Lubricating Equipment . . . Aircraft Products . . . Grease Fittings

If you write maker identify as IEN - 10414

There's an Inland SPEED-STITCHER for every stitching job

No other stitcher can offer all these features



- **Speed Regulator** — changes speed in a jiffy for greater operator efficiency and varying types of work.
- **Automatic Brake** — no drag, no severe starting jolt, greatly improved stitching.
- **Central Solenoid and Connecting Box**
- **Front location of "ON-OFF" switch.**

CHOICE OF MODELS

Seam Stitcher
Available with or without adjustable table
Straight Arm
Bottom Stitcher
Sword Arm, with or without adjustable table
Combination Straight Arm and Bottom Stitcher

Representatives in principal cities
Write or phone for complete data

INLAND WIRE PRODUCTS CO.
3963 South Lowe Avenue Chicago 9, Illinois
Phone: YArds 7-3113

If you write maker identify as IEN - 10415

90-A

This new engineering manual of facts on MUELLER BRASS CO. TUF-STUFF® ALUMINUM BRONZE ALLOYS is ready.

Write for your copy today

MUELLER BRASS CO. • PORT HURON 26, MICH.

If you write maker identify as IEN - 10416

USE LESS... *for Quicker Action*

Rockwood's Double Strength FOAM Liquid is faster spreading, more fluid and flows freely at sub-zero temperatures. It covers burning surfaces faster, seals off combustible vapors and flows freely around obstruction. Three parts of FOAM mixed with 97 of water form an excellent foam blanket that quickly re-seals if broken.

FOAM saves in many important ways. Saves cost of use, because *only 3%* of it forms your extinguishing agent. Saves storage space and shipping costs because it's concentrated. Saves vital time by its speedy, thorough action.

Write for *"Fire Fighting Products,"* Rockwood's illustrated catalog. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
40 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as IEN - 10417

This steel insert, molded into plastic Spring-Locks, gives strength where it's needed—at the point of load or impact—eliminates doubts concerning the strength of plastic at these critical points.

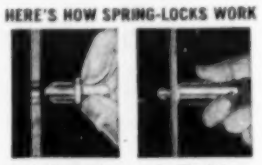
The design flexibility of plastic Spring-Locks makes them ideal for a variety of uses... shelf supports, washer cover knobs, drawer pulls and many others. Spring-Locks cut material and assembly costs, too. No special tools, bolts, nuts or threadings required. Just a half-turn locks them securely.

Many standard shapes and sizes of Simmons Spring-Locks are available or any shape head can be designed. Send for full details.

SIMMONS FASTENER CORPORATION
1758 North Broadway, Albany 1, N. Y.

Any shape head can be molded in metal or plastic.

HERE'S HOW SPRING-LOCKS WORK

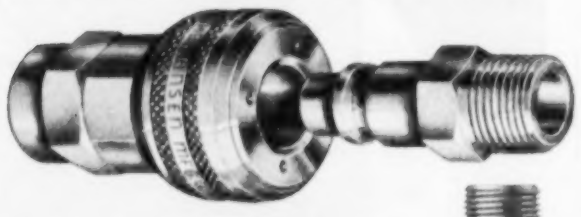


1. *Insert* 2. *Twist*
Steel insert carries load.

Simmons Spring-Lock ★ QUICK-LOCK ★ ROTO-LOCK

If you write maker identify as IEN - 10418

HANSEN
QUICK-CONNECTIVE
PUSH-TITE COUPLING
TRADE MARK
Provides Instant Automatic Flow or Shut-Off



To connect a Hansen Push-Tite Coupling, you merely push the Plug into the Socket with one hand. Flow is instantaneous.

To disconnect, push back sleeve on Socket . . . Coupling disconnects and flow is shut off instantly and automatically. No tools required. When Coupling is connected, Plug is free-swiveling, thus eliminating any possibility of kinks in hose.

Two-way shut-off and straight-through Couplings also available.
WRITE FOR CATALOG

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 10419

Bought your copy yet?

- 700 Pages
- 450 Illustrations

"One or Several Are Needed in Every Stamping Shop . . . *American Machinist*"

Sections on: Computing press jobs • Selecting proper press • Useful engineering tables • Die illustrations • Complete glossary • Plus a service section for Bliss presses. **$7.50**

E. W. BLISS CO.
(Handbook Department)
1384 Raff Road S. W., Canton, Ohio

Please rush me a copy of the Bliss Power Press Handbook.

I am enclosing $7.50 ..... • Bill me .....

NEW LITERATURE—Continued

Identify as IEN - 0722

SPROCKETS . . Taper-Lock design uses a split bushing that compresses to hold a shaft tightly. The sprocket portion is removable and renewable. Sizes, dimensions, list prices, corresponding roller chain specifications, selection charts, lubrication in 24-page Bulletin A-624. Dodge Mfg. Corp., 500 S. William St., Mishawaka, Ind.

Identify as IEN - 0723

SWITCHES . . Toggle switches in single and multiple-circuit design with a single operating lever. Standard, subminiature and sealed types in 8-page Catalog 73. Micro Div., Minneapolis Honeywell, 30 E. Spring St., Freeport, Ill.

Identify as IEN - 0724

SWITCHES . . Slide switches for appliances, small motors, instruments are shown in a considerable range of designs by 16-page Bulletin RC-9B, letterhead request please. It also shows rotary line switches for rheostats, controls. Stackpole Carbon Co., 1942 Tannery St., St. Marys, Pa.

Identify as IEN - 0725

TESTING . . Oscillographs and accessories to measure pressures, temperatures, accelerations, strains, vibrations, surface finish, also ultrasonic units, electro-acoustic instruments including an artificial ear. Bulletin ED-21701, letterhead request, 36 pages. Brush Electronics Co., 3403-7 Perkins Ave., Cleveland 14, Ohio

Identify as IEN - 0726

TESTING . . Universal Super "L" machines have a range of 30,000 to 600,000 lb., Selectorange electronic indicating equipment, hydraulic loading. How they work and details on models are in 24-page Bulletin 47. Tinius Olsen Testing Machine Co., 1104 Easton Road, Willow Grove, Pa.

Identify as IEN - 0727

TRACK ACCESSORIES . . Tie plates, splice bars, derails, bumping posts, car stops, crane stops, track jacks, bolts, spikes, track tools, mine ties, push cars. Catalog 575-B, 32 pages. L. B. Foster Co., Box 1647-A, Pittsburgh 30, Pa.

Identify as IEN - 0728

TRACTORS . . Wheel and crawler-type tractors handle a variety of products and materials by means of attachments. Picture review in 12-page Bulletin MS-916-535 may suggest an idea or two for your own work. Allis-Chalmers Mfg. Co., Tractor Div., 909 S. 70th St., Milwaukee 14, Wis.

Identify as IEN - 0729

LIFT TRUCKS . . Riding-type electric lift trucks with 1,000 to 4,000-lb. capacity make up the company's new Model-CF Skylift line. Details are in five 4-page bulletins, Forms CF-10, 15, 20, 30 and 40-15. Automatic Transportation Co., 149 W. 87th St., Chicago 20, Ill.

Identify as IEN - 0730

LIFT TRUCK . . Gasoline-engine fork truck with electric transmission has a 4,000-lb. rating. How it operates, standard specifications, attachments in 6-page Bulletin 1344. Baker-Raulang Co., 1248-52 W. 80th St., Cleveland 2, Ohio

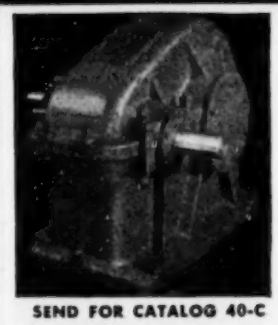
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10420

D. O. James
Established 1888

Continuous-tooth
HERRINGBONE GEAR SPEED REDUCERS
The Gear With the Backbone

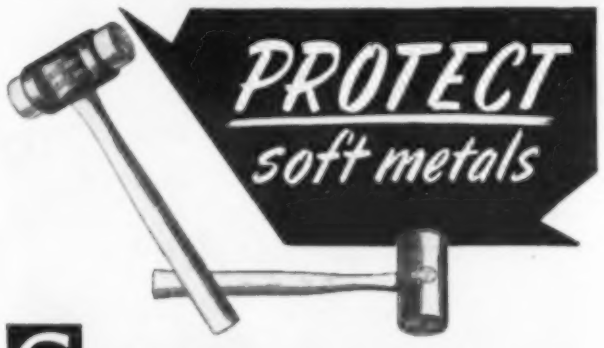
The operating efficiency and dependability of these reducers is continuous testimony to their design and inbuilt qualities of manufacture. They are made in single, double and triple reductions—come in many sizes and in a wide ratio and horsepower range.



SEND FOR CATALOG 40-C

D. O. JAMES GEAR MANUFACTURING CO.
1140 WEST MONROE STREET • CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 10421



Garland Rawhide Mallets and Hide-Faced Hammers are made of resilient Water Buffalo Hide, the toughest rawhide known. Will not damage steel, iron, brass, aluminum or other soft metals.

Longer wear and uniformly exact size result from compression under many tons pressure.

Extra faces fit securely without grinding.

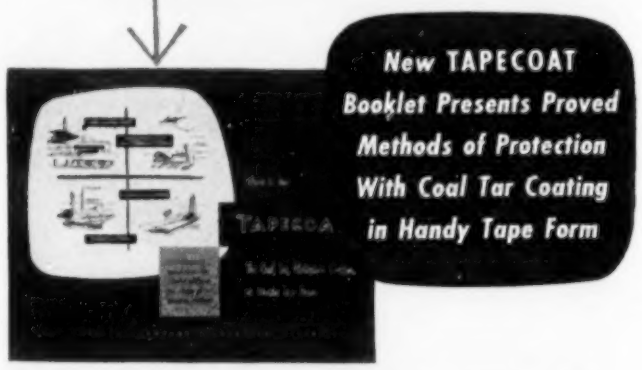
Write for free folder listing sizes, weights, and prices.

We will send you the name of your local dealer on request.

Garland MFG. CO. SACO, MAINE
Manufacturers of Rawhide Hammers, Mallets, Loom Pickers

If you write maker identify as IEN - 10422

HOW TO PROTECT VULNERABLE SURFACES AGAINST CORROSION

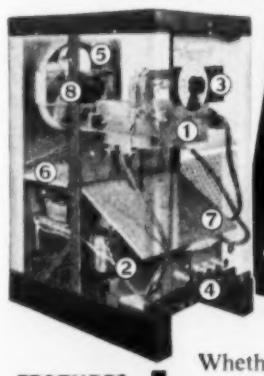


Wherever you have a corrosion problem, you will find this guide helpful in working out an economical and practical solution. Based on the experience and research of TAPECOAT engineers since 1941, this factual booklet shows where and how TAPECOAT coal tar coating in handy tape form can be used to overcome corrosive action—both underground and above ground. It presents proved methods of protecting pipe, pipe joints, fittings, couplings, tanks and other vulnerable surfaces, together with case histories demonstrating the ability of TAPECOAT to meet the most severe conditions.

Write for your copy of this helpful guide today.

The TAPECOAT COMPANY
Originators of Coal Tar Tape Protection
1553 Lyons Street
Evanston, Illinois

If you write maker identify as IEN - 10423



TODAY'S MOST ADVANCED D-C WELDER DESIGN
Makes D-C welding easier, more efficient than ever before . . . costs less to operate and maintain.

FEATURES

1. Efficient Rectifier.
2. Exclusive Transformer Design. No moving parts.
3. Calibrated current control.
4. Three current ranges.
5. Heavy Duty Cooling Fan.
6. Accessible primary.
7. Sturdy, safe cabinet.
8. Easy-grab lifting hooks.

Whether you operate one machine or many, the new Sureweld Rectifier Welder is your best D-C welder buy. It has no moving parts . . . nothing to wear out or cause noise. Operation is quiet, maintenance costs are almost negligible. Current adjustments are easy because you simply dial the current you want.

But most important, you get the one right welder for *your* job. That's because there are 5 different models to choose from, covering a current range of 2½ to 750 amps. Each model has safety flush-front construction, sturdy, drip-proof cabinet. See this new welder at your nearest NCG branch office or authorized dealer. Or write for Bulletin NH-114.

Copyright 1953, National Cylinder Gas Company

NCG NATIONAL CYLINDER GAS COMPANY
840 N. Michigan Ave., Chicago 11, Illinois

If you write maker identify as **IEN - 10424**

If you write maker identify as **IEN - 10425**

Look to these five reasons for long, trouble-free service in STRONG 70 Series Traps:

1. *Valve and seat guaranteed leakproof for one year*—made of STRONG's patented, wear-resistant Anum-Metl;
2. *Easy servicing*—permitted by the renewable seat design, cover with all working parts easily removed without breaking pipe connections;
3. *One piece bucket*—stainless steel, no welds;
4. *Turbulence avoided, choking minimized, 25% greater capacity*—with STRONG's exclusive Hi-Cap orifice;
5. *No dribbling, quick, full opening*—high ratio leverage.

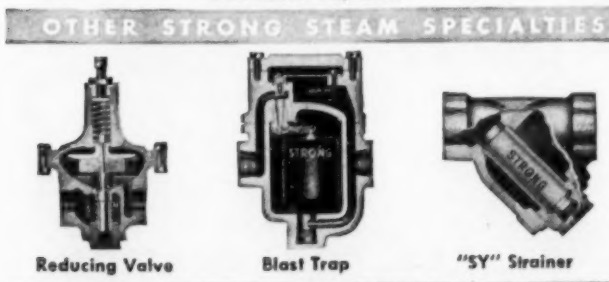
STRONG *in-line* 70 Series Traps are available in sizes from ½" to 1", semi-steel construction. STRONG's "two-in-one" blast trap with integral thermal air vent is also available in the 70 Series (see cut below).

Catalog No. 68-Q describes these traps in detail along with other STRONG traps. Write today.

*Trademark Reg. U. S. Pat. Off.

STRONG, CARLISLE & HAMMOND COMPANY
1392 WEST 3rd Street
Cleveland 13, Ohio
† ANUM METL Reg. Trade Mark

OTHER STRONG STEAM SPECIALTIES



Reducing Valve — Blast Trap — "SY" Strainer

STRONG

If you write maker identify as **IEN - 10427**

CONVEYING . . Tray type elevator for cartons, cases, drums, barrels

Source: COUNSEL MACHINE CO.
6-10 Hathaway St., Wallington, N. J.

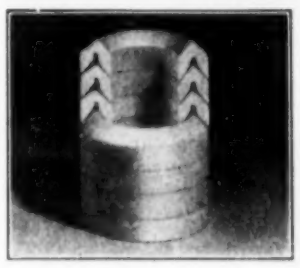
Each is custom built

Load trays are maintained in a horizontal plane for vertical or near-vertical movement, upward or downward, in this new Robo-Lift tray type conveyor. Loads are moved in to be picked up by the trays at one or more levels for discharge at a predetermined higher or lower point. Both pick up and discharge can be automatic or manual. Speed, for general purposes, is about 12 units per minute. Horizontal sections can be added to the vertical unit as required.

If you write maker identify as **IEN - 10428**

SEALING . . Plastic V-rings of molded Teflon, specified dimensions

Source: W. S. SHAMBAN & CO.
11615-19 W. Jefferson Blvd., Culver City, Calif.



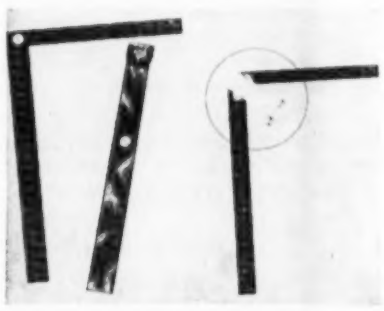
Pressure expands it

Series S-2500 is a new molded Teflon V-ring available in sets for rod and stem packing. Light pressure on the follower gland is sufficient to seal against leakage. The material in the ring is inert in the presence of hydraulic fluids, oils, acids, solvents. It is characterized by its low coefficient of friction. Temperature range is minus 110 to plus 500 deg. F. The material will not age in inactive service.

If you write maker identify as **IEN - 10429**

GAGE . . Rafter and framing square, demountable for convenient carrying

Source: TWIX MFG. COMPANY
40-11 21st St., Long Island City 1, N. Y.



About $5

New square is joined, rather than solid, through its angle corner. It can be taken apart, as shown in the illustration, and fitted into a carrying case. The unit is calibrated with etched markings and baked with lettering on 12-gage steel with a black oxide finish. Rafter tables, octagon scales and board measure are included.

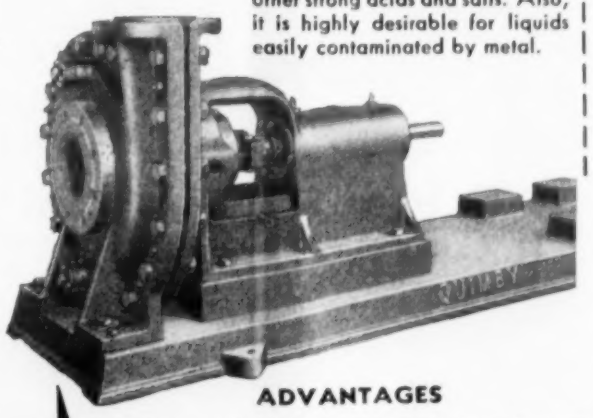
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10430**

Custom Rubber Lined PUMPS

Warren-Quimby Type DB

For handling hydrochloric and other strong acids and salts. Also, it is highly desirable for liquids easily contaminated by metal.



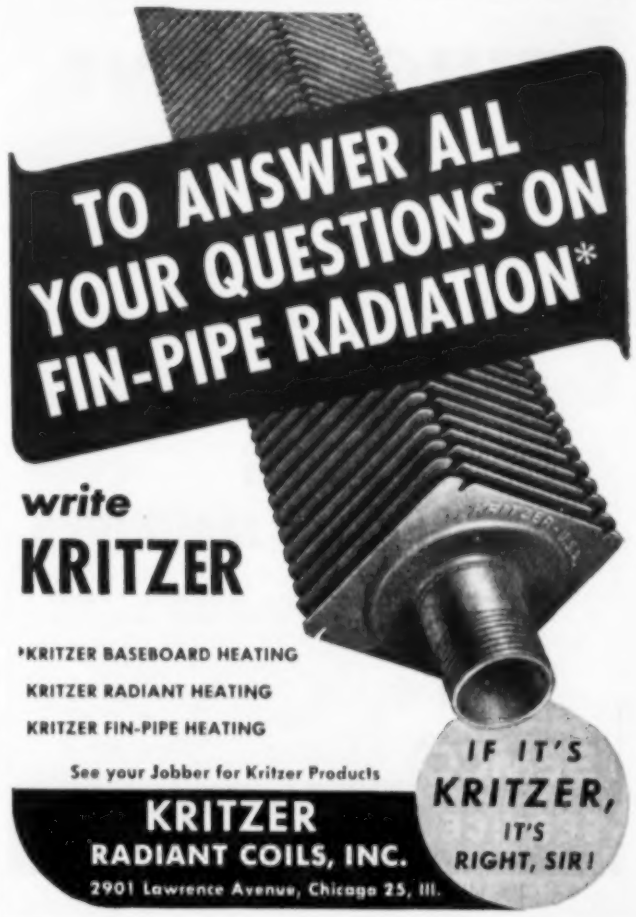
ADVANTAGES

1 Custom rubber lined to meet special requirements
2 Resistant to chemical corrosion
3 Resistant to physical abrasion
4 Sound rubber-to-metal bond
5 Capacities, to 2000 G.P.M., heads to 125 feet
6 Sizes, ½" to 8"
7 Over-size bearings
8 Baseplate drip-protected

Send for Bulletin WQ-212 1934-9

WARREN PUMPS
WARREN STEAM PUMP COMPANY, INC. WARREN, MASSACHUSETTS

If you write maker identify as **IEN - 10431**



If you write maker identify as **IEN - 10432**

modernize materials handling with

CARGOTAINERS

Cargotainers are designed to keep pace with modern methods of materials-handling because they are: 1. Sturdy and resistant to shock; 2. Readily folded when not in use; 3. Open mesh so that contents may easily be seen for quick inventory; 4. Efficiently designed for shipment, assembly line use, and vertical storage. Write for information concerning the new CLEARVIEW model with its exclusive base construction for greater durability and better locking and stacking. Dept. IEN, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

Pittsburgh Steel Products Company
A Subsidiary of Pittsburgh Steel Company

If you write maker identify as **IEN - 10433**

If you write maker identify as IEN - 10434

THIS PLANT

Provides **TOOLING**
and builds **SPECIAL MACHINES**

Thirty-four years of special machine and tool building has trained SEMCO tool-makers, engineers and skilled workmen — well able to most efficiently design, develop and build your new machinery and production equipment.

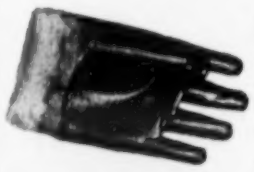
Write for a copy of our *Free Pamphlet—"Men, Machines and Equipment."* It gives a practical answer to your tooling, special machine development and experimental problems.

SEMCO
SERVICE MACHINE COMPANY
INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN - 10435

DON'T THROW AWAY
WORN OUT
PLASTIC COATED GLOVES

Glovco's New "Over-kote" plan of Cleaning, Repairing and Recoating Makes Them Safe and Good as New — at a fraction the cost of new!



This is a new service that will save money for you. Plants are saving 90% of the plastic coated gloves they once threw away. We guarantee satisfaction.

DON'T SCRAP LEATHER GLOVES

Glovco reclaims worn, torn, dirty leather faced gloves, welders' gloves, mitts, hand pads, aprons and other leather protective apparel.

DON'T SCRAP FABRIC GLOVES

Glovco reclaims worn, torn, dirty fabric hot mill, terry cloth, asbestos gloves, sleeves, drop cloths, etc. Send sample for trial demonstration.

Now Used in THOUSANDS of Plants

U. S. Industrial Glove Corp.
9350 Roselawn Ave.
Detroit 4, Mich.

Please forward complete Glovco data and name of nearest service outlet.

Company_____

Address_____

City & State_____

Per_____

NEW LITERATURE—Concluded

Identify as IEN - 0731

LIFT TRUCKS . . Put yourself in the driver's seat, suggests 36-page Bulletin 1462, to see how the company's Series-FT fork truck operates, how it disassembles for service, and the variety of attachments available. Buda Co., 15401 S. Commercial St., Harvey, Ill.

Identify as IEN - 0732

LIFT TRUCKS . . Handle barrels or cylindrical objects on pallets or skids that can be moved with a power lift truck, urges 8-page "Logistics of Barrels" Bulletin. Pictures in the bulletin show a number of examples. Elwell-Parker Electric Co., 4660 St. Clair Ave., Cleveland 3, Ohio

Identify as IEN - 0733

TUBE FITTINGS . . Ratings are to 60,000 lb. pressure for connectors, valves, couplings, adapters, filters, safety heads, ¼ to $\frac{9}{16}$ o. d. tube. Catalog 1053, 12 pages. High Pressure Equipment Co., Box 1174-A, Erie, Pa.

Identify as IEN - 0734

TUBES . . Hydraulic fluid line tube is cold drawn seamless steel; clean, workable, and tested to 1,000 lb. pressure. Stock sizes, bursting pressures, and JIC Standards that apply are in 4-page "Hydraulic Fluid Line Tubing". Joseph T. Ryerson & Son Inc., Box 8000-AA, Chicago 80, Ill.

Identify as IEN - 0735

VENTILATING . . Sixty-four pages of engineering information on fans including certified delivery ratings free and against resistance, friction calculations, physical fan laws, characteristic curves, dimensions, design features of "Macheta" axial-flow units. Ask for Catalog 20-A. Aerovent Fan Co., 710 E. Ash St., Piqua, Ohio

Identify as IEN - 0736

WASHERS . . List of progressive and compound dies on hand to make flat and tension washers, flat and dished circular blanks. Catalog 865, 16 pages, also illustrates stampings made on presses to 150 ton. Quadriga Mfg. Co., 215-231 W. Grand Ave., Dept. 1-5, Chicago 10, Ill.

Identify as IEN - 0737

WEIGHING . . Crane scale employs Baldwin SR-4 strain gages to weigh loads electronically. Standard capacities are 5 to 25 ton. Bulletin 4105, 8 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Philadelphia 42, Pa.

Identify as IEN - 0738

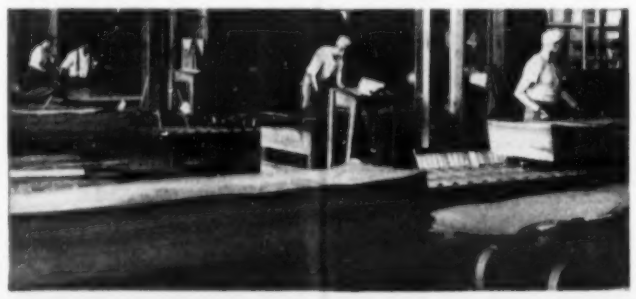
WHEELS . . Semi-pneumatic and solid-tire units for hand trucks and portable equipment have 6 to 16-in. o.d. and sleeve, ball, roller bearings. Sizes, wheel capacities, caster assemblies in 8-page Catalog 53. Goddeyne Wheel Products, 1302 N. McLellan St., Bay City, Mich.

Identify as IEN - 0739

WIRE ROPE SLING . . General-purpose unit, Type SW-55, is available in 13 sizes rated at 1.3 to 34.4 ton based on vertical use. Dualoc half-thimble endings resist wear. Bulletin DH-421, 4 pages. American Chain & Cable Co., 927-31 Connecticut Ave., Bridgeport 2, Conn.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10437



80% fewer hand injuries with JOB-FITTED gloves — in this metal products plant

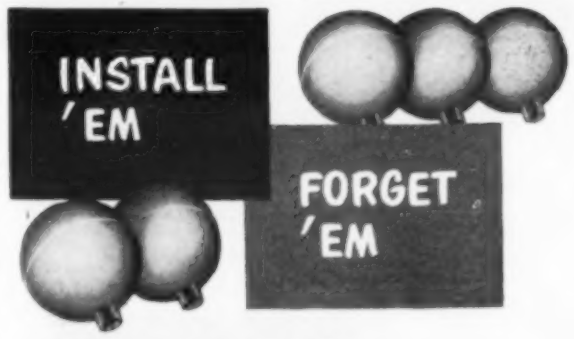
Accurate records by this large maker of galvanized steel products (name on request) showed this improvement after adopting gloves which fit their operations. The safer, cut-resistant gloves also cost less, often outwearing canvas or leather as much as 8 to 12 shifts.

Free test offer to employers:
If your operations involve abrasive, sharp or slippery materials, or presence of oil, chemicals or moderate heat, send us a short description. Without cost, we will supply samples of gloves which fit the condition, with simple procedure for job-testing.

Edmont
JOB-FITTED
GLOVES

Edmont Manufacturing Co.
1226 Walnut St., Coshocton, Ohio
Leading industrial distributors carry Edmont gloves in stock

If you write maker identify as IEN - 10438



STAINLESS STEEL FLOATS

● Stainless floats by Chicago Float Works give you a practically permanent installation. Whether for use on original equipment or for replacement, you just put 'em in and forget 'em. You'll get years and years of trouble-free service in high or low temperatures or pressures. All sizes, shapes, spud connections available. No corrosion problem . . . extreme buoyancy — the best in floats to meet every need!

● Standard Diameters 2" to 10" ● All Standard Spud Connections ● Top quality Stainless Steels ● Non-corized weld for superior strength, and corrosion resistance available where required

Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 10439

BURRELL "For Scientists Everywhere"

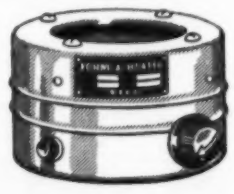
LABORATORY CHECK LIST

COLEMAN COMPAX
pH METER, Model 20

For efficient and accurate measurement of all aqueous solutions. Combines potentiometric precision with long-life mercury cell batteries. Complete, ready to use.

Cat. No. 43-418 Each—177.50

FORMA HEATERS



New Mantles of Woven Metal Cloth in Polished Metal Cases for Heating Flasks

Equipped with Thermo-regulators for temperature control.

Cat. No.	*FLASK capacity (ml)*	*Each*
42-553	500	35.00
(specify	1000	39.50
capacity)	2000	44.30
	3000	51.50
	5000	61.10

(Without Thermo-regulator deduct 12.50)

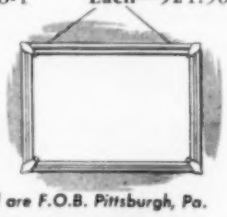
Bausch & Lomb METALLURGICAL MICROSCOPE Model CMET

With Tri-Vert illuminator for dark field, bright field and polarized light.

Inclined binocular with vertical illuminator and quadruple revolving nosepiece. Four Tri-Vert achromatic objectives 6.5x, 13x, 20x and 37x; two pair Huygenian eyepieces 7.5x and 12.5x. Complete in case.

Cat. No. 51-446-1 Each—921.50

BULLETIN BOARDS



Anodized aluminum frames, flush-mounted, green self-sealing surfaces. May be hung vertically or horizontally, singly or in sequence.

Cat. No. 7-964 (Specify size and quantity)
Size 18" x 24"—5.95
Size 24" x 36"—7.95

Prices listed are F.O.B. Pittsburgh, Pa.

BURRELL CORPORATION
Manufacturers and Distributors of SCIENTIFIC APPARATUS and LABORATORY CHEMICALS
2223 Fifth Avenue, Pittsburgh 19, Pennsylvania

If you write maker identify as IEN - 10441

Now...Spring Makers and Spring Users alike have a Uniform Method for Testing Springs!

THE TORRINGTON SPRING TESTER

Uses: for accurate inspection, in-use testing, designing springs for specific uses, and as a basis for statistical quality control.

Simple: can be used at operating levels by relatively inexperienced personnel. Portable!

Accurate: 2 models—the 3 pound model measures loads to the nearest 1/100 ounce, and the 16 pound model to the nearest 1/5 ounce; lengths and deflections to 1/1000 inch.

Fast: requires minimum time to adjust for accurate readings, or to reset for other springs.

Practical: measures under conditions approximating actual use, through interchangeable fittings.

High sensitivity: over a wide range, on both tension and compression types of springs.

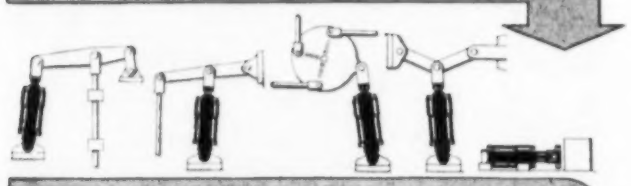
For complete information please write:

The TORRINGTON MANUFACTURING COMPANY TORRINGTON, CONNECTICUT

WORLD'S LARGEST BUILDERS OF SPRINGMAKING MACHINERY

If you write maker identify as IEN - 10442

FOR THE 1001 JOBS



WHERE CYLINDER POWER IS BEST TO USE . . .

HANNA CYLINDERS ARE THE *FINEST* YOU CAN CHOOSE!

FREE! "27 Ways to Use Cylinder Power." Send for the New "Cylinder Power in Action" Bulletin!

Hanna Engineering Works

HYDRAULIC AND PNEUMATIC EQUIPMENT . . CYLINDERS . . VALVES . . RIVETERS

1748 Elston Avenue • Chicago 22, Illinois

If you write maker identify as IEN - 10443

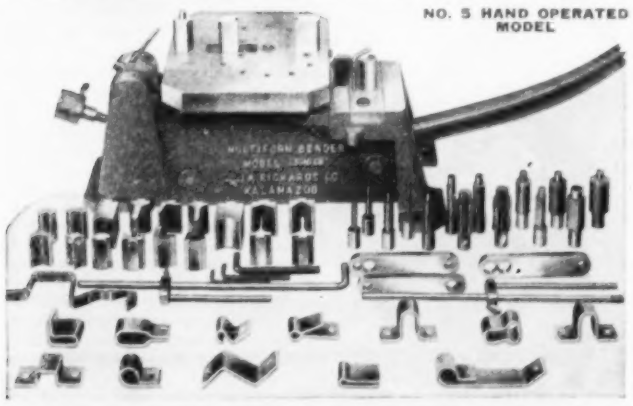
THE FAMOUS MUTIFORM

BENDER CUTTER

Produces Without Special Tooling • Saves Die Costs Saves on Expensive Presses

The illustration to the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to 1/8" x 1 1/2".

NO. 5 HAND OPERATED MODEL



FIVE-IN-ONE-TOOL—ALSO LARGER MODELS

Air Operated Models in this and Larger Sizes Available

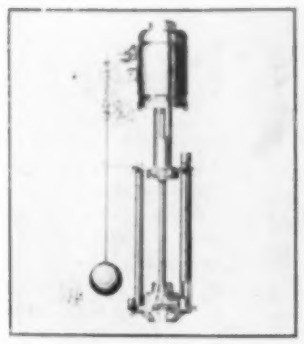
IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. R. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as IEN - 10444

PUMP . . Rubber lined centrifugal for sump duty on corrosive liquids

Source: GALIGHER COMPANY
543-47 W. 8th South St., Salt Lake City 4, Utah



Ask for Bulletin SP-53

Acid sludges, corrosive and foaming products with solids in suspension, can be handled by this new 1½-in. motor driven pump for flow to 75 gpm. and heads to 35 feet. The pump will handle abrasive pulps and acids in mills and smelters. It is suited for floor cleanup in chemical plants and to drain and fill acid tanks. It will pump out a sump until the liquid level is below the lower suction cover or within 2½ in. of the bottom. A float control, rubber covered and acid proofed, can be specified when desired.

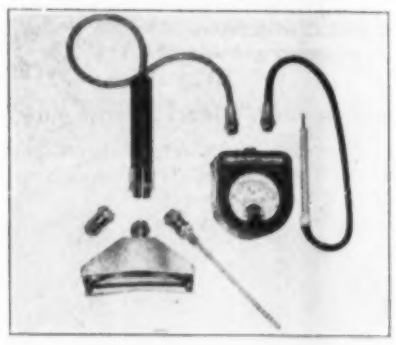
Pump assembly is in welded steel, rubber lined and covered. The drive shaft is suspended design so no submerged bearings or packings are required. Rubber covered screens on both sides of the housing prevent solids, larger than ¼ in., from entering. The impeller is fitted with a center disc that separates the pumping action of the two halves so liquid delivery continues until the level has been lowered to below the bottom of the lower suction cover.

The pump is normally supplied with a 1½-hp., 1,800-rpm. open drip-proof vertical motor. The upper end of the pump shaft is drilled to receive the motor shaft which is held in place by two set screws. Normal mounting is on a sump cover with four ½-in. bolts or lag screws. Mounting also can be made on a float so the pump will follow the liquid level.

If you write maker identify as IEN - 10445

PYROMETER . . Portable instrument for surface and immersion readings

Source: CYBERTRONIC CORPORATION
134-38 Eighth St., Upland, Chester, Pa.



Bulletin 240-T-B-27

Series 240-T designates a new line of portable shock protected pyrometers consisting of the rubber encased instrument, a 24-in. flexible coaxial cable and three interchangeable thermocouples. One is needle type for immersion or insertion into a body. The second is disc type for application on a relatively flat surface. The third is ribbon type to read temperature on a curved, standing or rotating surface.

Five ranges are maximum at 600 to 2,500 deg. F. A thermometer in the instrument housing indicates change in temperature at the cold junction for reading accuracy within 2 per cent of full scale deflection. The rubber enclosure measures 3⅞ by 3½ by 1¾ inches. Weight is one pound. The instrument and its armored cable list at $40. The thermocouples add $10 to $15 each.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10446

When heavy, unwieldy weldments like these diesel crank cases can be quickly swung into any position so that every weld is downhand — that's efficient welding.

Welders spend more time welding—do better welding at lower cost when they work with C-F Positioners because these hand and/or power operated machines reduce positioning time to a minimum. Investigate the cost saving advantages of C-F Positioners. They pay their way in any company.

Write for Bulletin WP 26— an illustrated circular detailing the Specific Advantages of C-F Positioners.

CULLEN-FRIESTEDT CO.
1310 S. Kilbourn Chicago 23, Ill.

If you write maker identify as IEN - 10447

Every day more and more factory men tell us —

Tokheim hand pumps are safer, faster, more useful!

This double-action pump has no equal. Delivers 20 gallons per minute of most liquids. Stops wasteful dripping and slippery floors. Reduces fire hazard and accidents common to other methods of transfer. Handles a wide variety of liquids. Adaptable for drums, skid tanks and underground installations. Call your dealer, your Tokheim representative, or write the factory for literature.

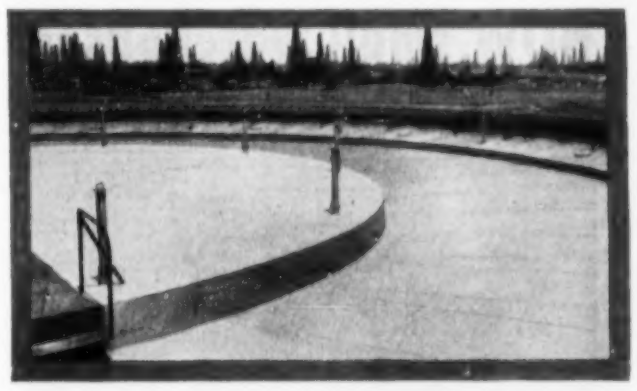
QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

A Tokheim will handle a variety of liquids

• Acetates • Alcohols • Aromatic Solvents • Chlorinated Solvents • Glycols • Ketones & Ethers • Petroleum Solvents • Plasticizers • Petroleum Products • Ammonia • Ammonia Hydroxide • Cutting Oils • Flushing Oils • Lacquer Thinners • Anti-Freezes • Castor Oil • Caustic Soda Solution • Freon • Glycerine • Turpentine • Water • Wood and Vegetable Oils.

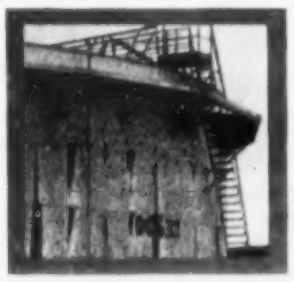
General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT SINCE 1901
1654 WABASH AVENUE FORT WAYNE 1, INDIANA
Factory Branch: 1309 Howard Street, San Francisco 3, California

If you write maker identify as IEN - 10448



Paint on oil tank roof "STILL LIKE NEW"

— after more than 3 years rough service



The entire floating roof of this oil tank is protected with a coating based on VINYLITE Brand Resins. Despite rough service, direct sun, and water accumulation in low spots, the coater reports, *"the deck on the first tank which is now over three years old looks just as good as the day they [our men] walked away from it."*

In comparison, the small photograph shows the outside of a tank finished at the same time with ordinary paint. It is streaked with rust stains where the ordinary paint failed. Yet, note the top rim, finished with a coating based on VINYLITE Resins, is in excellent condition.

Hundreds of case histories show that coatings based on VINYLITE Resins do a better, longer-lasting job—on metal, masonry or other surfaces. Properly applied, they won't crack, chip, peel or fade. They withstand rough treatment, chemicals, salt water, weather extremes, industrial gases. They increase equipment life, cut maintenance costs.

For a list of suppliers and a copy of our free booklets, "BAKELITE and VINYLITE Resins for the Chemical Industry," and "BAKELITE and VINYLITE Resins for the Petroleum Industry," write Dept. RX-3.

Photos courtesy
Plastic Coating Corporation, Houston, Texas

BAKELITE TRADE-MARK and **Vinylite** BRAND **RESINS**

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.

If you write maker identify as IEN - 10450

NEW better way of maintaining accurate liquid level

Bulletin describes operating principle of Fenwal DETECT-A-FLO

If accurate, fool-proof maintenance of liquid level (within .1") is important to you, then you will want to know more about the Fenwal DETECT-A-FLO unit.

No gauges, no floats, no exposed moving parts. Instead, the device contains a constant heat source, and operates on a heat transfer principle. It employs a Fenwal THERMOSWITCH® element which is actuated whenever there is a rise or fall of liquid level beyond the point where the unit is placed. Ambient compensated, hermetically sealed, it is compact and resistant to vibration and corrosion. Easy to install, nothing to wear out, to stick, or clog!

The newly developed Fenwal DETECT-A-FLO will bring improved dependability and accuracy in problems of liquid-level maintenance. Complete engineering data is ready now. For more information, send for your free copy of bulletin. Write **Fenwal Incorporated, 79 Pleasant Street, Ashland, Mass.**

Fenwal DETECT-A-FLO

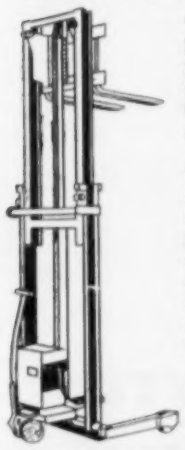
Electric Temperature Control and Detection Devices

If you write maker identify as IEN - 10451

NOW small warehouses can stack ceiling-high

with the **RAYMOND PALLET STACKER**

Even the smallest warehouse can store goods ceiling-high with the new RAYMOND Pallet Stacker! This hydraulic truck was designed expressly for firms that have no need for larger, more costly tiering trucks.



The RAYMOND Pallet Stacker handles loads weighing up to 2,000 lbs.—stacks them as high as 115". It's a smooth-rolling highly maneuverable tiering truck that actually right-angle stacks from aisles less than 6 ft. wide.

The Pallet Stacker is equipped with a ¾ HP motor-driven pump that plugs into any 110 V socket. The pump supplies power for raising loads quickly, easily—elevating and lowering controls are conveniently located near the power unit. The hand lowering valve gives you absolute control over the speed of descent.

SEND FOR BULLETIN Get full details on RAYMOND'S new Pallet Stacker — mail coupon for Bulletin 270X today.

The RAYMOND CORPORATION
3518 Madison St., Greene, N.Y.

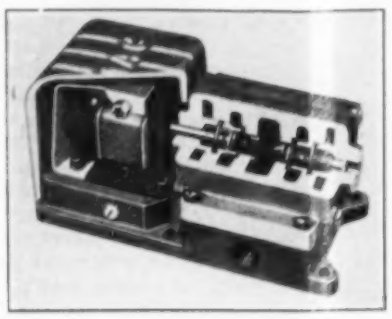
Please send me Bulletin 270X, describing your new Pallet Stacker.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 10453

VALVE . . Solenoid operated, 2, 3, 4 way for air pressure or vacuum

Source: MECHANICAL AIR CONTROLS INC.
15309 W. 11-Mile Road, Detroit 37, Mich.



Catalog 53

Sizes range from ¼ to ¾ in. in the company's new line of solenoid operated pneumatic valves. Designs include 2, 3, and 4-way assemblies with a single solenoid and spring return or with two solenoids, one at each end of the valve housing.

Bodies and retainers are bronze castings. Bores are polished. Spools are made of aluminum, centerless ground and treated for resistance to wear. The seals are synthetic material. The bases carry the pipe connections. The solenoids are designed for continuous duty.

If you write maker identify as IEN - 10454

ADHESIVE . . Rubber base liquid dries to handle, then is reactivated

Source: RUBBER LATEX CO.
653 Delawanna Ave., Clifton, N. J.

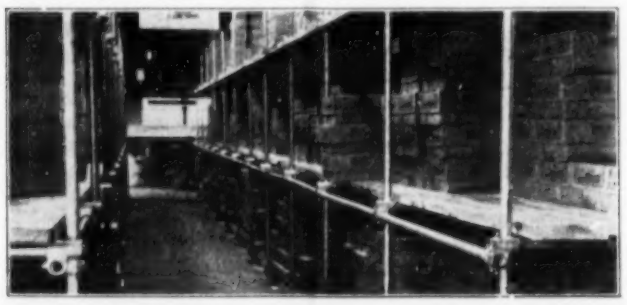
User employs petroleum solvent

Rula 181-3 is a new adhesive for manufacturers of die-cut felt, cork, sponge, rubber parts, weather stripping and sound deadening parts. The adhesive is applied like paint to rolls or sheets and is allowed to dry. Parts are cut from the coated rolls and shipped to the user.

He reactivates the adhesive surface by application of a petroleum solvent and completes assembly on metal, wood, plastics, plaster, painted surfaces, fabrics. The resulting bond is stronger than the sponge, cork or felt and is not subject to deterioration over a long period of service.

If you write maker identify as IEN - 10455

We intended to use an illustration with our previous story on the smart use a manufacturer found for a quantity of



scaffold fittings he had purchased from Amidon Engineering Co., 38-367 Cleveland Road, Elyria 14, Ohio. The illustration appears here to show you how the manufacturer built a storage rack with the fittings, scrap pipe and wood planks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10456

TOGGLE CLAMPS

De-Sta-Co Toggle Clamps are extremely flexible in their application and are economically and easily adapted to work-holding fixtures for assembly, welding, bending, machining or other production processes. Smooth, fast, powerful clamping action clamps parts quickly . . . holds them firmly in perfect alignment . . . releases instantly for easy removal and insertion of new workpiece.

De-Sta-Co clamps are engineered for rugged use in production; reamed bearing holes insure precision fit, long life and sensitive operation . . . offsets in handles and links relieve friction . . . made with cold drawn bars, and forged portable clamp parts. Accessories for adapting clamps to specific applications are available.

Write today for name of nearest distributor and your copy of the De-Sta-Co catalog which describes over 40 fixture and portable models with positive holding pressures up to 4000 pounds.

DESTACO DETROIT STAMPING COMPANY
342 MIDLAND AVENUE • DETROIT 3, MICH.

If you write maker identify as IEN - 10457

THERE ARE 101 REASONS WHY . . .

INDUSTRY USES MORE TRANSPORTERS

than any other operator-led electric truck

ASK FOR CASE HISTORIES LIKE THESE FROM YOUR INDUSTRY

Midwestern steel plant cuts steel lath handling time 85% (despite 46% increase in volume handled) with Automatic Transporters and transtackers.

Southern Machinery Mfr., Prattville, Ala., shows total increase of 600% in tons handled per man-hour with fleet of 8 Automatic Transporters. One man, instead of 1500 lb. loads, handles 4000 lb. loads 50% faster with 50% saving in round trip time in loading and unloading push trucks.

Here's the truck that does so many jobs so well all industry uses it. Yes, for 101 good reasons, but mainly because—by eliminating slow, costly hand-handling—it saves industry millions of dollars. See for yourself how the "101" Transporter raises, moves up to 6000 pounds with touch-of-finger ease...lets 1 man do work of 3...releases 2 out of 3 for more productive work. Get all the facts.

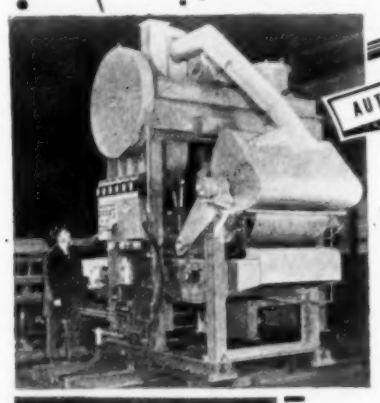
For case histories in your industry write:

Automatic®
109 West 87th St., Dept. P-3, Chicago 20, Ill.
World's Largest Exclusive Builder of Electric Driven Industrial Trucks

If you write maker identify as IEN - 10458

• NORTH ERIE • NORTH ERIE • NORTH ERIE • NORTH ERIE

NORTH ENGINEERING . . . FOR LOWER COST PRODUCTION



AUTOMATIC FABRICATORS

AUTOMATIC FABRICATION and WORK HANDLING EQUIPMENT
•
PRODUCTION TOOLING and SPECIAL MACHINERY

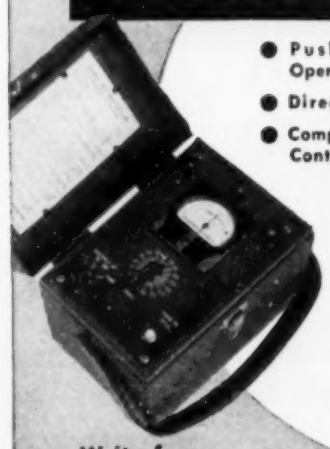
NORTH Erie

THE H. W. NORTH Co.
1743 PARADE STREET
ERIE, PENNSYLVANIA

SPECIAL PURPOSE MACHINERY and EQUIPMENT for the BASIC INDUSTRIES

If you write maker identify as IEN - 10459

Simple • Accurate
GROUND RESISTANCE TESTING with VIBROGROUND



- Push-Button Operation
- Direct-Reading
- Completely Self-Contained
- True readings, regardless of earth resistance and condition, stray frequencies, voltages or currents

YOU can be sure of safe, effective grounding of all types of electrical systems when you test with the light, easy-to-use Vibroground. Simple operation and built-in accuracy virtually eliminate reading errors. No leveling, cranking or outside power source is necessary; and direct readings are independent of auxiliary probe resistance.

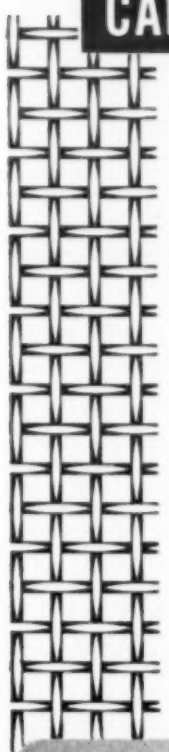
Full data on Vibrogrounds, including testing techniques and illustrations, is yours for the asking.

Write for BULLETIN 105

ASSOCIATED RESEARCH, Incorporated
"Precision Instruments Since 1936"
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as **IEN - 10460**

CAL-WIC WIRE CLOTH



THE RIGHT WEAVE

• • • for every industrial requirement including screening, filtering, grading, cleaning and numerous other types of processing.

THE RIGHT WEIGHT

• • • precision-fabricated for long-lasting dependability and economy.

THE RIGHT METAL

• • • for highest resistance to chemical action, moisture, corrosion, abrasion and extremes of temperature.

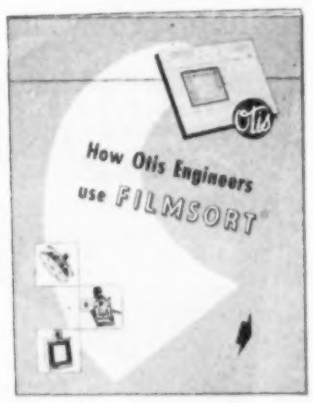
For additional information write or phone our nearest sales office.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel and Iron Corporation, Denver, Colorado
PACIFIC COAST: Pacific Coast Division, Oakland, California

CAL-WIC CFI
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 10461**

simple, sure and accepted!



What would you do if, because of a space shortage, your engineering drawings had to be stored 15 miles from your engineers? Otis Elevator Company was faced with this problem and it did the simplest thing of all—it "Filmsorted" its file of 140,000 engineering drawings!

here's how FILMSORT does it...

Otis "Filmsorted" its drawings by microfilming them and mounting the positive film frame of each drawing in compact, uniform Filmsort cards. Now just three standard file cabinets of Filmsort cards give Otis a duplicate of its 140,000 engineering drawings for immediate reference to all its tracings.

Space...Security...Reference...that's what Otis Elevator got from its Filmsort system. And now after months of operation, Otis finds new benefits—less wear and tear of originals, less misfiles, lower print costs. Find out why Otis "Filmsorted" its engineering drawings. *Write today for this illustrated booklet.*

FILMSORT is being used by:

- **Bell Telephone Laboratories**
- **Hamilton Standard Propeller**
- **Ontario Hydro Power Commission**
- **Thompson Products Company**
- **Heald Machinery Company**

. . . and many other firms.

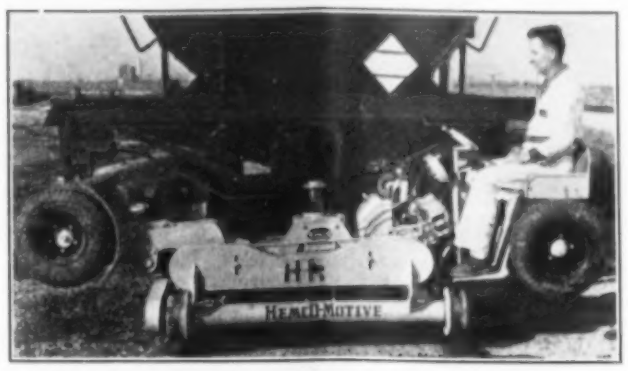
FIND OUT WHY!

FILMSORT
Dept. I
Pearl River New York

If you write maker identify as **IEN - 10463**

TRUCK . . Engine driven tractor to move and spot railroad cars

Source: HEMCO MFG. INC.
653 Hemco Ave., Argonia, Kansas



Driven by a Wisconsin engine

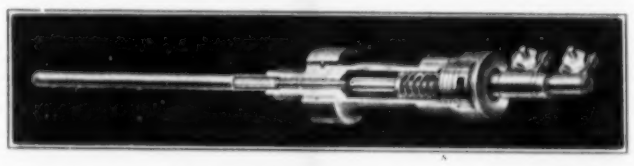
HemcO-Motive is a new engine driven tractor that rides interchangeably on a road and on a railroad track. It rolls over the road on pneumatic tired wheels to be brought into position above a track. The road wheels are then retracted so the track wheels contact the rails. In this position, the truck rides crab-wise into place under a railroad car coupling where the operator actuates a hydraulic pump to bring a piston up under the coupler.

This action transfers a portion of the weight of the railroad car to the truck to give it sufficient traction to move the car as required. Draw bar pull is 7,400 lb. which is sufficient, under average conditions, to move three loaded cars or six empties. Operating speed on the rails is 150 fpm. and on the road is between 8 and 10 mi. per hour. The truck can be ridden off the rails at any point and driven around a car to the opposite end. The operator is seated in a position where he has a clear view around the end of a car.

If you write maker identify as **IEN - 10464**

SWITCH . . Thermal design for temperatures to 1,500 deg. F.

Source: CONTROL PRODUCTS INC.
304-8 Sussex St., Harrison, N. J.



Rates ¼ ampere on 28 volts

Quartz rod in this new Type ASA-21-2 thermal switch changes length on change in temperature to open and close platinum-iridium contacts welded to flexing arms. The new two-wire unit is available for a temperature range between 60 and 1,500 deg. F. on continuous duty. It can be employed to 2,000 deg. F. for short periods. It is calibrated at the factory for temperature rise to a specified operating point with the contacts normally open or normally closed.

Applications are on jet engines, gas turbines, rocket motors, afterburner controls. Parts, other than the quartz rod and contacts, are stainless steel. Weight is about 6 ounces. Body length is minimum at 2½ inches. Mounting threads are ½-in. straight or ⅜-in. pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10465**

Get the facts!

Complete data on automatic *electric* braking for machinery!

Now, you can have the *complete story* on new Warner Electric Brakes—the fastest, simplest automatic controls for all types of industrial machinery. New 16-page catalog gives you torque ratings, description of operation, control systems, and outstanding results achieved on a variety of applications. If you want faster, better brake performance, send for your free copy, today! Ask for Bulletin WEB 6114.

WARNER **Warner Electric Brake & Clutch Company**
Beloit, Wisconsin

If you write maker identify as **IEN - 10466**

NEW better way of detecting gas or vapor flow

Bulletin describes operating principle of Fenwal DETECT-A-FLO

If detection of change of air flow, gas, or vapor past a given point is important to you, then you will want to know more about the new Fenwal DETECT-A-FLO unit.

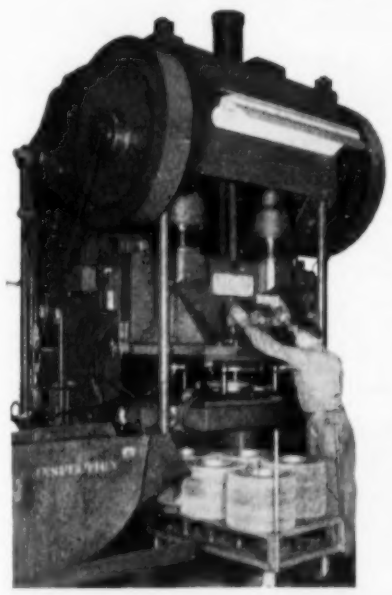
The device contains a constant heat source and operates on a heat transfer principle. The electrical contacts of a basic Fenwal THERMOSWITCH® element are actuated whenever there is a change in the rate of flow beyond the set point. Easy to install, ambient compensated, hermetically sealed, compact, resistant to vibration and corrosion — has no exposed moving parts.

The newly developed Fenwal DETECT-A-FLO will bring improved dependability in applications where detection or control of flow is vital. Can be used in tandem to meter flow as well. Comprehensive engineering data is ready now. For more information, send now for your free copy of bulletin. Write **Fenwal Incorporated, 79 Pleasant Street, Ashland, Mass.**

Fenwal DETECT-A-FLO
Electric Temperature Control and Detection Devices

If you write maker identify as **IEN - 10467**

2000 CLUTCH PLATES PUNCHED PER SHIFT



Clutch plates of sizes 11¾" to 22¾" O.D. are made with this 300 ton Steelweld Press.

Many unusual jobs far afield from bending can be done economically on Steelweld Presses built with simple variations to suit requirements. The machine illustrated provides a low-cost method of punching clutch plates of 11 to 13 gauge metal.

Send for free copy of catalog No. 2011

STEELWELD BENDING PRESSES CATALOG No. 2010

THE CLEVELAND CRANE & ENGINEERING CO.
4237 East 281st St. Wickliffe, Ohio

STEELWELD PRESSES

If you write maker identify as **IEN - 10468**

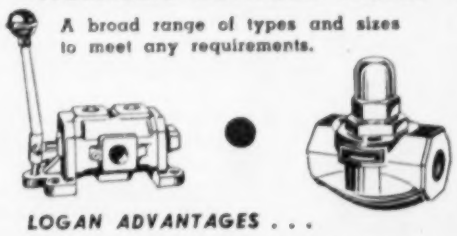
LOGAN AIR AND HYDRAULIC POWER

SPEEDS • COORDINATES • REFINES PRODUCTION IN OVER 10,000 INDUSTRIAL PLANTS

• AIR-DRAULIC CYLINDERS • AIR and HYDRAULIC PRESSES • COLLET GRIP TUBE FITTINGS • SUMPS • SLIDE-FLOW COOLANT PUMPS • HYDRAULIC POWER UNITS • HYDRAULIC CYLINDERS • HYDRAULIC CONTROL VALVES • AIR CHUCKS • AIR CONTROL VALVES • AIR CYLINDERS •

Logan HYDRAULIC CONTROL VALVES

A broad range of types and sizes to meet any requirements.



LOGAN ADVANTAGES . . .

- Ease of Installation
- Effortless Operation
- Long-Life Construction
- Unrestricted Porting
- Easy to Service
- Infrequent Maintenance

SAVES TIME *Logan* EXPERT MOTION

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST

Let Logan Engineers help you design your Air and Hydraulic Circuits.

LOGANSPORT MACHINE CO., INC.
811 Center Avenue Logansport, Indiana

If you write maker identify as IEN - 10469

NEW IMPROVED HAND SCRAPERS

with just the correct spring

and other features never before incorporated in any hand scraper

This new Hand Scraper, Model No. 5, is the most improved tool of its kind ever produced. Light in weight, easier to use with palm fitting comfort grip, faster cutting. Rubber handle swivel pad, at small extra cost, for those who place scraper handle against body for extra leverage. Three sizes: 18"—20"—22" long. Furnished with high speed steel or Carboloy Blades. Cost less than home made scrapers.

Write for Bulletin No. 9-35.

Anderson BROS MFG. CO

ANDERSON BROS. MFG. CO., ROCKFORD, ILL.

If you write maker identify as IEN - 10470

Revolutionary new Baker gas-O-matic fork truck saves money in 3 ways!

40% less fuel...

Tests by independent laboratories and industrial plants show gas consumption of about ½ gallon per hour—less than 60% as much as for conventional gas trucks. Economy results from low operating speed of engine, exclusive Baker variable voltage generator and efficient Baker drive motor.

40% lower maintenance...

No clutch or gear-shift, eliminating most common cause of gas truck breakdowns. Dependable electric drive and many new design features mean 40% lower repair costs and 40% less down time.

50% longer life...

Majority of GAS-O-MATIC parts are standard Baker electric truck parts. Government permits tax write off of electric trucks over twice as many years as for gas. With one engine replacement, GAS-O-MATIC should last 10 years or more.

Get the whole story from your Baker representative or write for Bulletin 1344

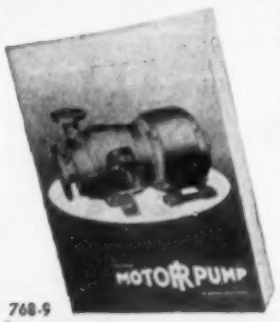
THE BAKER-RAULANG COMPANY
1226 WEST 80th STREET • CLEVELAND 2, OHIO
The Baker-Lull Corp., Subsidiary, Minneapolis, Minn. Material Handling and Construction Equipment

Baker industrial trucks

If you write maker identify as IEN - 10471

get this

. . . information on how to use a SMALLER pump for your jobs!



In this booklet are facts that prove you can use a *smaller* Ingersoll-Rand Motorpump to meet the same industrial pumping requirements as ordinary pumps of *larger* hp! This means you save on first cost . . . also on space, weight and power consumption. It's being done in other plants right now . . . find how you can do it, too.

768-9

CLIP AND MAIL, NOW

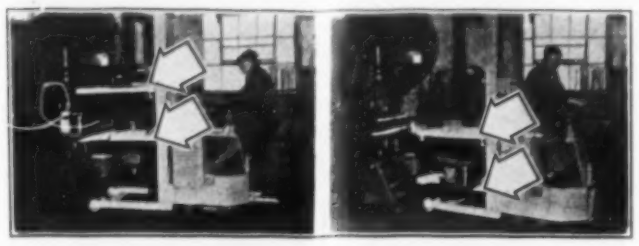
INGERSOLL-RAND CO., 11 Broadway, New York 4, N. Y.
Please send me, at no obligation, Booklet 7093-C on the complete line of I-R Motorpumps.

NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____
(Please Print)

If you write maker identify as IEN - 10472

TRUCK . . Power lift design has two load platforms to handle dies

Source: MARKET FORGE CO.
27 Garvey St., Everett 49, Mass.



To service a press line

A new die set can be brought to a press and put in place of one to be returned to storage in one continuous operation with this new Loadmobile truck. It mounts two load platforms with which the press tools are delivered and taken away after the truck has been positioned once. The same operation takes place in the store room to remove and place die sets on racks.

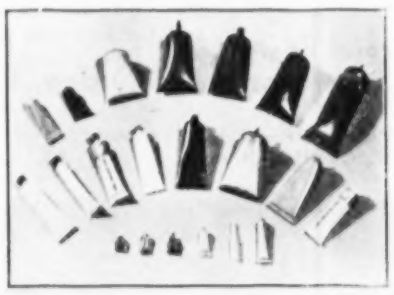
The truck is driven by an engine generator set employing a 12-hp. gasoline engine and a 12-volt dc. generator. The engine is started by operating the generator as a motor and employing the battery that is part of the standard equipment. Three speed control centers at a foot pedal. Maximum speed is 5 mph.

The platforms are equipped with rollers to assist in loading and unloading. Load capacity is to 2 ton. Width starts at 26 inches. Platform length is 30 to 48 inches.

If you write maker identify as IEN - 10473

PACKAGING . . Vinylite tubes for fluid materials and machine parts

Source: WALLACE CONTAINER CO.
5860-64 Crocker St., Los Angeles 3, Calif.



From ⅛ to 8 ounces

Vynite designates a new line of collapsible plastic tubes, in transparent or opaque material, in which to package fluid and solid materials and seal them in by application of heat and pressure at the open end. The material remains serviceable in temperatures to 250 deg. F. It is leak-proof, tough, can be sterilized and hot filled. It will stand up under rough handling.

If you write maker identify as IEN - 10474

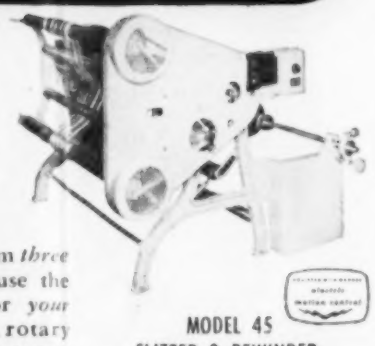
Perhaps you have products that might be painted by the tumbling method. If this is so and you want to find out for certain, ask Tumb-L-Matic Inc., 4508-12 Bullard Ave., New York 70, N. Y. This company has teamed up with Hoffard Varnish Company to offer free paint tumbling test facilities to companies who paint products in quantity. You can find if your products can be tumble painted economically, the type of paint or varnish best suited, the amount to use per batch, the type of tumbling equipment to use, the length of time required, the costs compared to your present method.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10475

NEW HOBBS SLITTERS & REWINDERS HANDLE LIGHTER and HEAVIER MATERIALS!

Tender, delicate film, as well as heavier weights of paper, plastics, and fabrics are easily handled on low-cost, low-maintenance Hobbs machines.



MODEL 45
SLITTER & REWINDER

Now you can select from *three* types of cutters and use the one which is best for *your* material. Shear-type, rotary contact or razor-type cutters *all* available!

Smoother starts and stops are made possible by Warner electric clutch and brake. Makes it easy to handle light, tender films, foils, etc. without damage. Power to clutch adjusted by simply turning rheostat button! Four models available to cut widths up to 30", 40", 45", and 60". Rewinds up to 30" diam. Material up to 20/1000" thick.

Send for complete information! Free factory test run using your material without obligation!

HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 5, MASS.
Chicago Office 549 W. Washington Blvd.
EST. 1882

Manufacturers of Jacques Hand Shears, Hobbs Production Cutters, Corner Cutters, Slitters and Rewinders, Autotronic and Tri-Power Die Presses

If you write maker identify as IEN - 10476

BRUNING ELECTRIC ERASER

Saves hours of work... Protects valuable drawings

ERASER CAN'T FLY OUT . . . valuable drawings are safe with a BRUNING Electric Eraser. Exclusive *7-inch* eraser feeds through hollow shaft — can't fly out and let ferrule gouge paper.

SAVES TIME . . . adds extra hours of working time by eliminating tiresome, finger-cramping manual erasing.

RUNS COOL AND QUIET . . . permanently lubricated bearings mean no overheating in steady operation, are mounted in rubber for vibration-free performance. Only one moving part.

EASY TO USE . . . lightweight aluminum housing fits fingers like a pencil. Eraser is extended or replaced in seconds.

Phone or write Bruning — there's an office near you—for more facts and figures on how to save time and tempers with Bruning Electric Eraser. CHARLES BRUNING COMPANY, Dept. R93, 4700 Montrose Avenue, Chicago 41, Illinois.

A-3-3

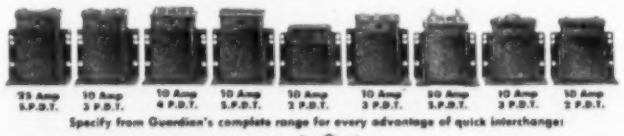
BRUNING
Everything for the Engineer and Draftsman

If you write maker identify as IEN - 10477

for every plane...
GUARDIAN® APPROVED *Interchangeable* AIRCRAFT **RELAYS**

Standard spacing of mounting bracket holes is the "master key" to complete *interchangeability* of these highly reliable Guardian Aircraft Relays. Other bracket dimensions vary only between back plates and terminals on face plates. Units range from S.P.S.T. (time delay available), to 4 P.D.T., with open-type mounting or sealed to MIL-R—6106 specifications. Many available to the new M.S. specifications. Weights range from 7.5 ounces to 20.8 ounces. Get complete *flexibility* of control at the design, modification and retrofit stages. Your copy of Bulletin 1 A-R tells how. Write.

NOTE THE PRECISE ALIGNMENT OF MOUNTING HOLES!



Specify from Guardian's complete range for every advantage of quick interchange!

GUARDIAN ELECTRIC
1620-K W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 10478

make it **STRONGER**
do it **FASTER**
with

RAYTHEON WELDPOWER*

Attaching copper lead wires is only one example of the many applications where Raytheon Weldpower Units eliminate slow, less satisfactory methods.

Let us show you how Raytheon Weldpower can improve production of small parts involving assembly of ferrous, non-ferrous or dissimilar metals. Send samples and details . . . or write for complete information. Address Dept. IN-9.

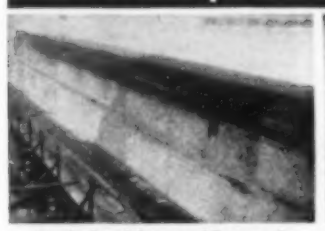
*Reg. U. S. Pat. Off.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago • New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION: 17 RECTOR STREET, NEW YORK CITY

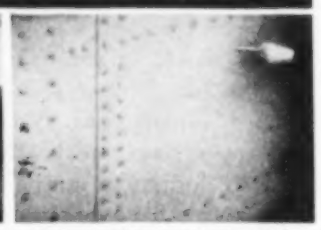
If you write maker identify as IEN - 10479

SUBMERGED 3 Years IN RIVER

VINSYNITE PRE-TREATED STEEL TEST PANEL Rates Tops in Rust Resistance



Steel-plate lift gate of Emsworth Dam, Ohio River near Pittsburgh. Twenty-five coating systems are under continuing test.



Close-up of gate section treated with Vinsynite-Vinyl System. Note comparative absence of rust and corrosion.

In the continuing Corps of Engineers test shown above, Vinsynite-Vinyl and twenty-four other systems were under observation. After three years constant submersion the Vinsynite-Vinyl panel was voted outstandingly superior for protecting the metal.

If you have a corrosion problem, either in maintenance or in finishing any type of metal products, it will pay you to check the advantages of Vinsynite. Applied easily by brush, spray or dip, Vinsynite forms a perfect protective base for other paints. Let us send you specific test data and case histories to prove it!

SEND FOR FREE LITERATURE

SPECIALTY COATINGS, INC., Division of THOMPSON & CO.
1000 Allegheny Ave., Oakmont, Pa.

Vinsynite
COMBINES PROTECTION AND ECONOMY

If you write maker identify as IEN - 10480

Lithographers National Association Awards

MEYERCORD DECALS FIRST PLACE AGAIN IN 1953!

Produced for Storkline Furniture Corp. —Fawn and Bear crib decoration in third dimensional technique.

1st 1953

Produced for Eli Lilly and Co.—oil paint recreation of Florence Nightingale distributed in observance of hospital week.

1st 1952

Awards Made for Outstanding Merit and Distinction in Production of Decalcomania Lithography

For the second straight year the decal industry has been invited to compete in the Lithographers National Association Awards . . . and for the second straight year we proudly acknowledge the winning of FIRST PLACE by The Meyercord Co. This award is made to recognize and honor those responsible for the design, creation and production of outstanding examples of decal lithography. Not content to rest on our laurels, Meyercord will continue, as in the past, to create even better new ideas and techniques to serve industry with decal transfers for every needed application . . . for every commercial surface and finish.

It is important to you to know that The Meyercord Co. has been honored by expert judges recruited from top levels of the graphic arts. When you bring your decal transfer problem to Meyercord you are *sure* you will receive the counsel of carefully trained and experienced people . . . backed by the finest and most complete laboratory and production facilities available.

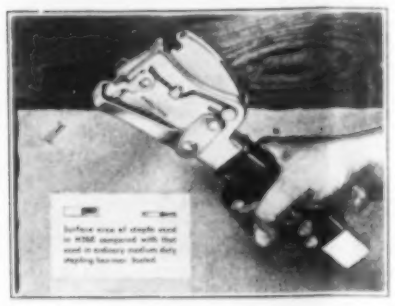
Your inquiry is invited . . .

THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. J-315, 5323 WEST LAKE STREET • CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 10482

STAPLING . . Hammer type tool drives heavy staple with 3/8 in. legs

Source: BOSTITCH INCORPORATED
1010 Mechanic St., Westerly, R. I.



Holds 100 staples

Model H2BR is a new hammer type tool. It takes staples made of wire having a rectangular 0.102 by 0.030-in. section and 3/8-in. leg length. The 0.102-in. dimension is about twice that of the staple driven by the Model-H2B, previously described IEN-1163-51.

Application of linings in freight cars, insulation batts and roofing paper in building construction are representative uses for the wide staple. One hand operation and one blow will drive the staple into hard or soft wood. Weight is 2 lb., 8 ounces. Eastern list is $17.50.

If you write maker identify as IEN - 10483

TANK . . Made of aluminum, standardized for low pressure storage

Source: ALUMINUM CO. OF AMERICA
670 Gulf Bldg., Dept. 22, Pittsburgh 19, Pa.

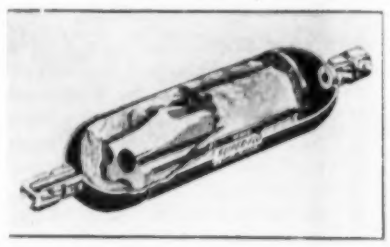
Available for quick delivery

A new line of tanks for materials storage at atmospheric or low pressure is announced by the company in standardized design. Capacities range from 5,800 to 16,400 gal. in both horizontal and vertical types. Each tank is equipped with a 20-in. manhole of fixed or swing design. Standard welded neck connections can be specified. Units measuring 10 ft. in diameter are made of 1/4-in. welded 3-S aluminum alloy.

If you write maker identify as IEN - 10484

DRYING . . Pipe line unit takes moisture, dirt from refrigerant

Source: REMCO INCORPORATED
49 W. New Castle St., Zelienople, Pa.

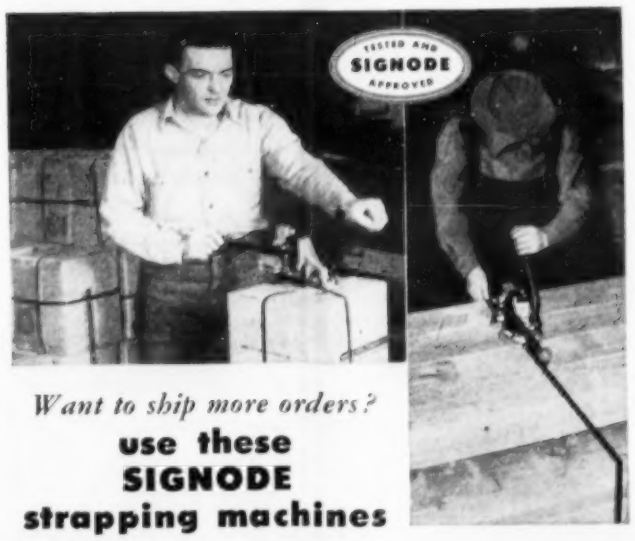


Conditions refrigerant

Super-Flo is a combination of molded drying element, known as Remcal, with a filling of Fiberglas and a screened outlet in this new Filter-Dryer for refrigerants. The unit is available in various capacities to 5 ton of refrigeration. It adsorbs acids to prevent corrosion in the lines. It takes out moisture and separates foreign solid matter from the refrigerant. Moisture is retained in the drying element at temperatures to 150 deg. F. The screen stops particles larger than 0.0046 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10485



Want to ship more orders?

use these SIGNODE strapping machines

If the daily total of containers strapped for shipping isn't impressive, these light Signode Strapping Machines can help step up the output! Both tools tension, cut, automatically feed the seal, and seal rapidly without tiring the operator. Model AC is used on small to medium size containers; model A, on larger and heavier containers, skids and pallets. Model AC frequently is attached to our Model TM-1 tool mount for production line strapping. Ask your Signode man to demonstrate. Or, write for details. *Signode Steel Strapping Co., 2611 N. Western Ave., Chicago 47, Ill.*

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 10486

GRIGOLEIT keeps you in TRIM

The demand for GRIGOLEIT small, plated stampings and finished zinc die-castings for appliance trim grows and grows. That's because manufacturers everywhere have discovered the outstanding sales appeal GRIGOLEIT experience and facilities bring to their product. You'll find GRIGOLEIT offers greater service and economy, too. Contact GRIGOLEIT today.

Here is a sample of quality GRIGOLEIT molded plastics. A complete line is available for your selection.

THE GRIGOLEIT COMPANY
"Serving Industry for Twenty Five Years"
142 E. NORTH ST. DECATUR, ILLINOIS

If you write maker identify as IEN - 10487

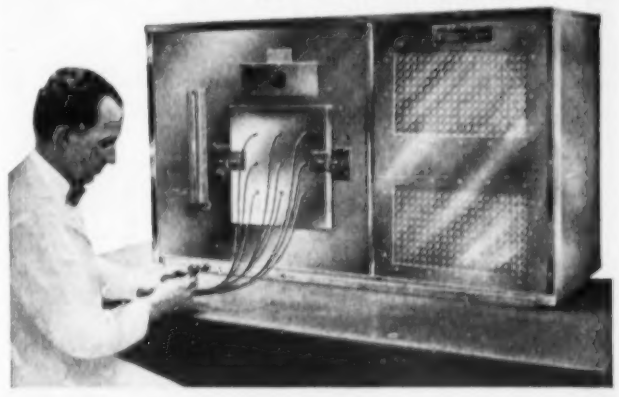
HIGH AND LOW TEMPERATURES NEW BENCH-TYPE TEST UNIT

WEBBER
TRADE MARK REGISTERED

COMPLETE TEMPERATURE RANGE
TESTING UNITS

Combine high and low temperatures within the same cabinet with all controls self contained. Unit measures 50"x28"x20" with a testing chamber 12"x12"x12". Temperature range is from -80° F., to 185° F. Heat application is accomplished with reverse cycle refrigeration, which eliminates the hazards associated with open heating elements. A blower is provided for even distribution of temperatures and greater testing accuracy. Latch-type or hinge-type door optional. Accelerated pull-down to -80° in 30 minutes or less.

Write today for more complete information



INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC.
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 10488

Chicago MOUNTED Wheels

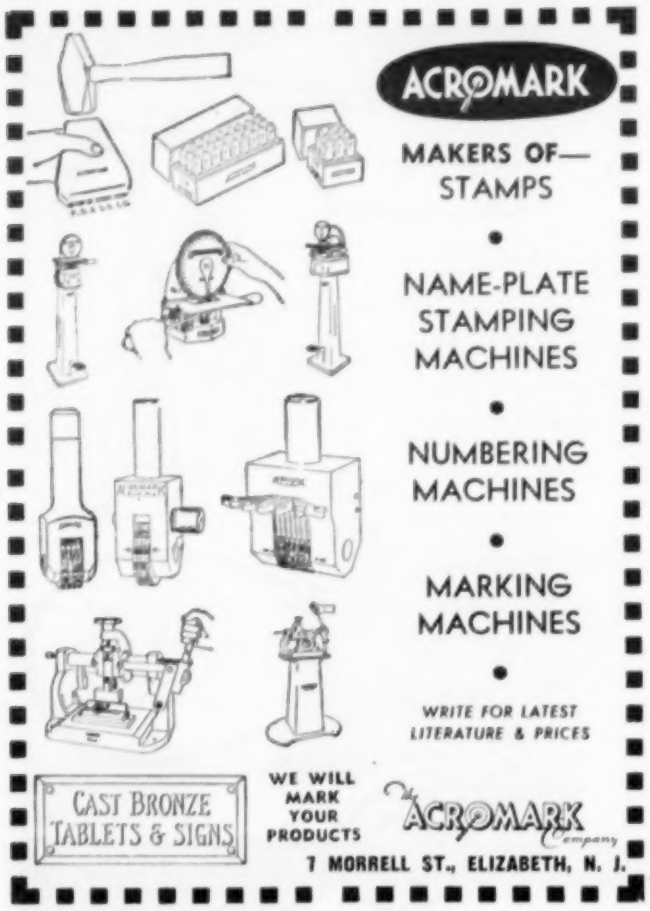
...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & Mfg. Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 10489



If you write maker identify as IEN - 10490

If you write maker identify as IEN - 10492

WEIGHING . . Hydraulic scale suspends from crane hook, to 5 ton

Source: A. H. EMERY CO.
Grove & Pine Sts., New Canaan, Conn.

Carries and weighs

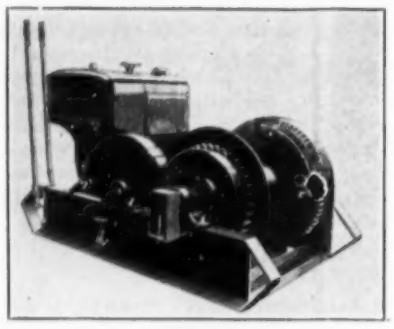
Four capacities, between ½ and 5 ton, are available in this new crane scale. It mounts its dial at a 15-deg. angle with vertical to assist in reading from the floor. The scale provides for a 25 per cent tare adjustment by moving the pointer. It is accurate within 0.2 per cent of full scale.

The dial is mounted at the side of the Emery force measuring cell on which operation is based. At the top rear is a U-bolt to take a crane hook. At the bottom rear is a swivel load hook. A flat base is provided to support the scale when it is not suspended from a crane. The dial is 21½ in. in diameter and is covered with unbreakable plastic. Required head room is about 19 inches.

If you write maker identify as IEN - 10493

WINCH . . Engine or motor drive, rates 12,000 lb. pull at 50 fpm.

Source: KING MFG. CORP.
3144-48 W. Chicago Ave., Chicago 22, Ill.

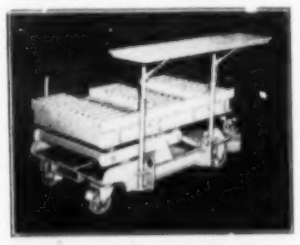


Model 2510-H

Car pulling is the intended use for this new power driven winch. It winds wire rope on its clutch and brake equipped free-spooling drum. The clutch is hydraulic design. Single line pull rates 12,000 lb. at 50 fpm. Standard drive is by a Wisconsin air cooled gasoline engine. Starting equipment for the engine or electric motor drive can be specified.

If you write maker identify as IEN - 10494

Dependable supply of strip steel is provided ahead of a punch press by special assembly of one of the portable elevating tables made by Raymond Corporation, 35105 Madison St., Greene, N. Y. The table is equipped with a roller top and a feed shelf. A bundle of strip, measuring 15 by 72 by 16 in., is placed on the roller top by a crane and is pushed over to make room for a second reserve bundle. The table is elevated by the foot operated pump to bring the individual strips into place beside the feed shelf. Load capacity on the table is 5 ton.

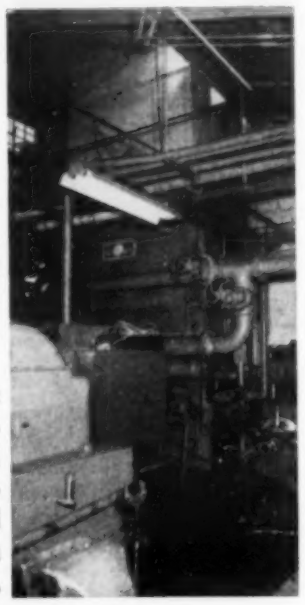


All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10495

If you write maker identify as IEN - 10496

YOU GET TRUSTWORTHY LIQUID or GAS COOLING Plus Great Water Saving



● With the NIAGARA AERO HEAT EXCHANGER you can cool air, gas, water, oils, chemicals, jacket water for engines or process equipment. You get lower costs and really accurate control of temperature. You have a closed system of cooling, free from dirt and maintenance troubles.

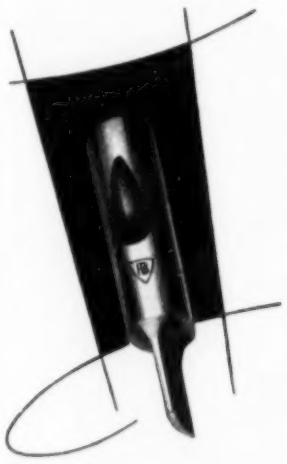
The Niagara Aero Heat Exchanger uses atmospheric air to cool liquids and gases. Great saving in cooling water, piping and pumping and power return the cost to you quickly.

Write for Bulletin No. 120

NIAGARA BLOWER COMPANY
Dept. EN, 405 Lexington Ave., New York 17, N.Y.

If you write maker identify as IEN - 10497

WHY R-B PUNCHES *are Easier to Use*



Just a push, a twist, and "click" your R-B punch or die button is accurately ALIGNED and LOCKED in place. The R-B ball lock prevents radial or vertical movement of the punch or die button in the retainer—no additional keying is required.

R-B punches and die buttons are just as easy to remove—simply insert tanged tool in retainer hole to release ball lock. Standardized and completely interchangeable in any shape or size, these easy to use punches and die buttons save your time and energy.

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 74 • 12615 BURT ROAD • DETROIT 23, MICH.

***Also Produced in* OTHER ALLIED PLANTS**
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF
FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN - 10498

If you write maker identify as **IEN - 10499**

....WHAT'S NEW AT BRISTOL....

Meet the world's simplest instrument system!

TRUE PLUG-IN SERVICE—results in great savings in installation costs; units can be plugged in or out without stopping process or control.

It's Bristol's new METAGRAPHIC pneumatic transmission instrument system for measuring, indicating, recording and controlling pressure, temperature, vacuum, flow, differential pressure and liquid level.

Here are the big advantages:

SIMPLICITY—fewer parts, fewer adjustments, and less service required. Ranges can be changed in seconds.

FLEXIBILITY—units can be combined like building blocks to make any kind of arrangement.

Get the whole METAGRAPHIC story by writing to The Bristol Company, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as **IEN - 10500**

NEW COST-SAVING INFORMATION!

for —
- *Architects*
- *Consulting Engineers*
- *Contractors*
- *Plant Engineers*
- *Power Engineers*
- *Building Managements*

If you're concerned in any way with specifying, selecting, installing, operating or maintaining boilers for any kind of plant or building, you'll want this new bulletin describing the latest cost-saving features of

Powermaster®

PACKAGED AUTOMATIC BOILERS

Then compare *Powermaster,* feature by feature, with any other packaged boiler and you'll see why it's today's best buy in automatic steam generation. For example, only *Powermaster* now guarantees 83% *minimum* efficiency with No. 6 oil! That means real fuel economy.

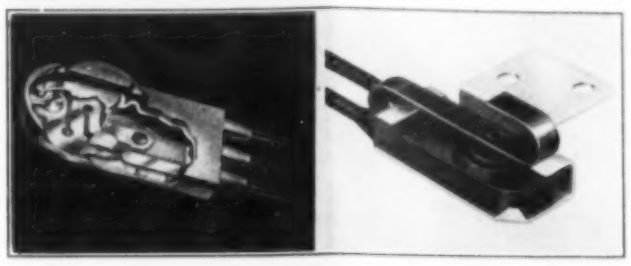
SEND FOR BULLETIN 1219 NOW...
on your company letterhead, telling us your steam requirements and operating conditions.

ORR & SEMBOWER, INC.
860 Morgantown Road, Reading, Penna.

If you write maker identify as **IEN - 10502**

SWITCH . . Snap action design waterproof 10 amp. on 110 volt ac.

Source: CONTROL PRODUCTS INC.
304-8 Sussex St., Harrison, N. J.



Meets Army Specification 60-977-2

Illustrated are two new designs in the company's line of snap acting waterproof switches, previously described IEN-12859-52. Both employ beryllium copper springs fabricated in the shape of a sine curve. The switch to the left is a single-pole, double-throw, three-wire unit for use on machines and equipment where water, oil, grit, must be excluded. The switch to the right is a special assembly for a vending machine to prevent operation unless certain removable elements are in place.

The mechanism is enclosed in a waterproof, oilproof covering that can be specified in silicone or other synthetic rubber. The covering is flexible and so can be depressed to operate the contacts. Operating temperature range is from minus 65 to plus 165 deg. F. Rating is 10 amp. on 100-volt resistive ac., 20 amp. on 28-volt resistive dc. The contacts are silver alloy. Housing length is about 1¾ inches.

If you write maker identify as **IEN - 10503**

CLEANING . . Vacuum machine, wet or dry operation, 5 gallon tank

Source: MULTI-CLEAN PRODUCTS INC.
2281 Ford Parkway, St. Paul 1, Minn.

For the little jobs

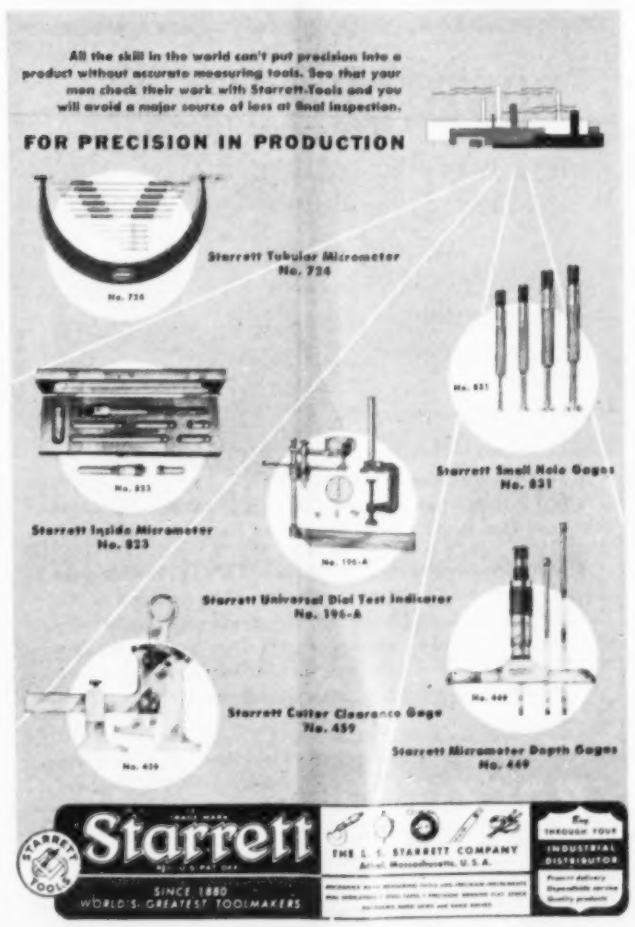
Water cannot enter the vacuum blower and motor on this new design of the Model MCV-205B machine, previously described IEN-9272-52, following addition of the company's electronic cutoff switch. The switch opens the motor circuit on passage of a single drop. It protects the equipment even though the operator attempts to continue wet operation with a full tank. The tank must be emptied, the switch electrodes dried, the filter drained and the switch turned off and then on before restarting.

New design of the motor brushes assures that they will continue at right angles with the armature for even wear. The design has been tested in 1,200 to 1,500 hr. of operation as compared with the previous 500 hr. for the old style brush assembly. The new brushes can wear down to a certain safe limit, then they no longer make contact and the machine will stop.

The new machine weighs 36 pounds. It is driven by a ⅝-hp. universal motor on 110 volts. It rates 108 cfm. and has a 52-in. water lift as its suction rating.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10504**



If you write maker identify as **IEN - 10505**

THE AD MAN WAS *FLABBERGASTED*

TO SHOW this ad man some real holding power, we set a #12 Rawlplug in concrete. Attaching a jack and scales, we applied a direct pull. Up, up climbed the indicator till, when the plug started to creep, it showed 2200 lbs! . . . Rawlplugs and other Rawl devices have tremendous holding power—and they come in a complete line. Order them from your usual supplier.

RAWLPLUGS
Fibre screw anchor for use with wood or lag screws. Only universal anchor that can be used in any material. Wood screw sizes #6 to #20; Lag screw sizes #⅜ to #⅝.

RAWL-ANCHORS
Heavy duty masonry anchor of "confined lead type" for holding bolts. Made in one piece—double ended—cannot be misapplied. Bolt sizes ¼" to 1"

RAWL-DRIVES
Only expansion bolt combining anchor and bolt in one piece. Simple to use, easy to install. Drives like nail into drilled hole. Tremendous holding power. Sizes 3/16" to ⅝"

RAWL-TAPERS
The improved machine screw anchor. The taper permits use in undersized holes, resulting in saving of drill costs. Machine screw sizes—6 x 32 to ⅝ x 11.

RAWL TOGGLE BOLTS
For simplicity of installation and security of anchoring any fixture or utility in hollow walls or ceilings.

RAWLDRILLS
Three point easy-to-sharpen masonry drills for hand and power drilling. For Rotary drilling—use Rawl Carbide tipped drills.

RAWL HAMMER-SETS
Newest type of heavy duty machine bolt anchor. Hammer is only tool needed to set it permanently in the masonry. Bolt sizes—3/16" to ⅝"

THE RAWLPLUG COMPANY, INC.
271 Church Street
New York 13, N. Y.

If you write maker identify as **IEN - 10506**

400% FASTER—

that's the performance record of Millers Falls Screw Drivers on this exacting job

For years, driving screws on the pulley stops of traverse tracks had to be done by hand. Torque must be held within close tolerances. Too much — and the thin-gauge tracks crush. Too little — and the stops loosen.

But, as on so many exacting assembly jobs, Millers Falls Electric Screw Drivers with the *patented,* super-sensitive "Adjustomatic" Clutch proved ideal for the assignment.

Today, twenty of these powerful, versatile tools are speeding production for a leading manufacturer. Month after month, each drives thousands of screws daily — accurately, uniformly, and 400% faster than was previously possible.

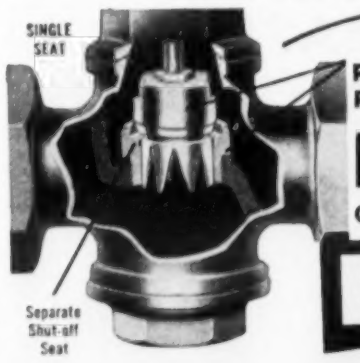
No matter what driving problem you may have, Millers Falls screw drivers, nut runners and stud setters can save you time and money. We've never found a job too delicate — or too tough. Write for details and a demonstration.

MILLERS FALLS COMPANY
Greenfield, Mass.

MILLERS FALLS TOOLS SINCE 1868

The Mark of Superiority

If you write maker identify as **IEN - 10507**



Easily Renewable Plug and Seat

POWERS

CHARACTERIZED V-PORT

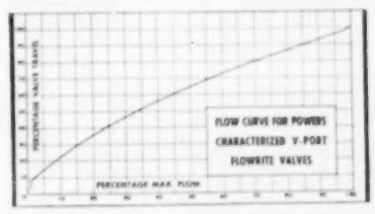
FLOWRITE VALVE

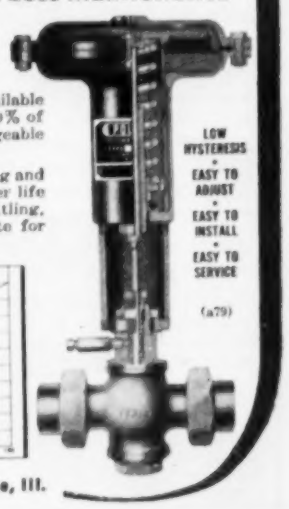
Gives Better Control with Less Maintenance

SPECIAL FLOW CHARACTERISTICS—High lift V-Port plug provides proportional flow throughout entire lift of stem as shown in chart below.

WIDE VARIETY OF SIZES—½" valve available with plugs to give 15%, 30%, 60% or 100% of maximum capacity. Easily interchangeable without removing valve from line.

SUPERIOR DESIGN of stainless steel plug and seat reduces wire drawing, insures longer life and tight shut-off. V-Ports do the throttling, protecting separate shut-off seat. Write for circular (a70).





THE POWERS REGULATOR CO., Skokie, Ill.

If you write maker identify as IEN - 10508

IF YOU HAVE A DUST PROBLEM

Send for this *FREE* Bulletin

Reverse Air Jet cleaning of filter tubes is the most important improvement in cloth dust filtering developed for industrial plants during the past 50 years. This Bulletin (No. 528) contains new information on dust control.

The DAY Company
813-3rd Avenue N.E. • Minneapolis 13, Minnesota
IN CANADA: P.O. Box 701, Ft. William, Ont.
Branch Plants: Buffalo, Ft. Worth, Welland, Ont.

DAY SINCE 1881 — DUST CONTROL — A SINGLE UNIT OR A COMPLETE SYSTEM

If you write maker identify as IEN - 10509

CALL

Our stocks of Certified Quality Steel are large and becoming more complete. Quick, dependable service is assured.

RYERSON

PRINCIPAL PRODUCTS:
Bars • Structures • Plates • Sheets • Tubing
Allegheny Stainless • Alloy and Tool Steel
Inland 4-Way Safety Plate • Babbitt
Metal Working Machinery and Tools, etc.

FOR STEEL

JOSEPH T. RYERSON & SON, Inc.
Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Seattle, Spokane, Los Angeles, San Francisco

If you write maker identify as IEN - 10510

NEW BEARING CALCULATOR

Free!

Gives you needed load, speed and life data with slide-rule speed

Here is a real time saver for thrust bearing users—a slide scale that calculates quickly the basic information necessary to proper bearing selection. Easy to use. Practically eliminates pencil-and-paper calculations. Supplied free on request. Mail coupon today!

Aetna

AETNA BALL AND ROLLER BEARING COMPANY
4600 Schubert Avenue, Chicago 39, Illinois

Please send me, free of charge and without obligation, your new Bearing Calculator.

NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE_____ STATE_____

If you write maker identify as IEN - 10511

DRILLING . . Portable electric kit with 1/4 in. drill and accessory parts

Source: THOR POWER TOOL CO.
173-77 N. State St., Aurora, Ill.

For utility use

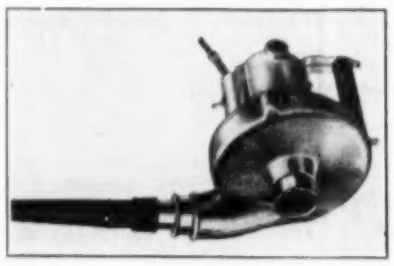
The company announces new assembly of its Copper Line electric drill and a set of accessory parts in a steel carrying case. The drill, previously described IEN-3394-53, is driven by a universal motor and is assembled on Oilite bearings in a die cast housing. A ball thrust bearing is mounted back of the spindle. The drill alone lists at about $23.

The accessory parts include an arbor adapter, a grinding wheel, wire brush, buffing wheel, polishing compound, 13 high speed drills from 1/16 to 1/4 inch, a horizontal drill stand, and the steel case. Complete list price, with the drill, is about $44 including a chuck.

If you write maker identify as IEN - 10512

CLEANING . . Portable blower for pressure or vacuum, 1 hp. motor

Source: PREMIER COMPANY
753-57 Woodlawn Ave., St. Paul 1, Minn.



For general use

Model 150 is a new centrifugal blower and 1-hp. universal 110-volt motor for heavy duty cleaning operations. The blower will handle 220 cfm. at 28.6-in. pressure. It rates 40.5 in. in vacuum operation. The motor is grease packed ball bearing design. The assembly weighs 16 pounds.

Several kits of attachments and tools include a dirt bag, braid-covered rubber hose, hose coupling, nozzles, slide brush, and a shoulder carrying strap. Stationary application can be made also on dust producing equipment in a plant.

If you write maker identify as IEN - 10513

Decalcomania nameplate has been designed by Meyercord Company, 5321-25 W. Lake St., Chicago 44, Ill., to carry the name and address of the manufacturer of given equipment and also his local dealer through whom the equipment is purchased. Individual short-run dealer imprints are ordered by the dealer from the equipment maker in an arrangement that is less expensive that if the dealer tried to order them for himself. Meyercord will be happy to tell you how the plan works and about the excellent results for the equipment user who is directed by the nameplate to the nearest authorized service organization.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10514

BOSTITCH T5 TACKER

One in the hand is worth two men with hammers and tacks!

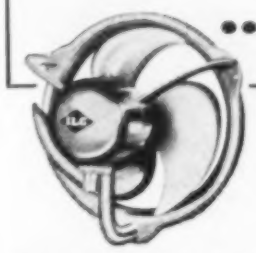
- Just about twice as fast—that's how manufacturers and contractors compare the Bostitch T5 Tacker to hammer and tacks.
- There are other big advantages. The T5 Tacker permits accurate locating of staples, even in tight spots. Drives staples to within 1/16" of corners, penetrates deep into hard or gummy woods. One-hand operation leaves other hand free for holding or aligning material. Equally important, workers like it.

BOSTITCH fastens it better AND FASTER with wire

For more information about the Bostitch T5 Tacker and for application details, write BOSTITCH, 649 Mechanic St., Westerly, R. I.

If you write maker identify as IEN - 10515

ILG Fans and Ventilators ...via Graybar



Send for—
NEW INDUSTRIAL VENTILATION GUIDE
—it's free!

Graybar offers this helpful ILG book as a guide to making your plant a healthier, more pleasant place to work. It simplifies the job of specifying ventilating equipment by providing complete air change tables, illustrations of typical installations, and a catalog section giving data and specifications on ILG fans and ventilators.

The patented, ILG-built self-cooled motor assures long life and uninterrupted service. You get the low-operating cost of an open-type motor while still retaining the protective features of a fully-enclosed unit. Cooled by fresh outside air, the ILG motor won't gum up . . . saves you 5% to 10% on power costs.

You'll want to investigate the line of ILG-built fans and ventilators. There's a size and type to meet your particular ventilating requirements—propeller fans, centrifugal fans, ventilators, blowers, unit heaters—all available via Graybar.

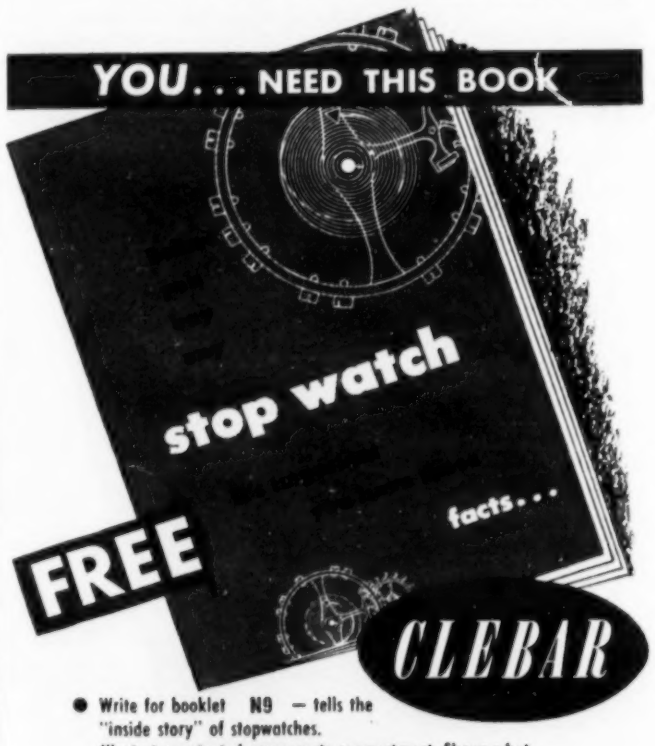
Check with your near-by Graybar Representative for the full story. *Graybar Electric Company, Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical — GraybaR ELECTRIC COMPANY

343-129

If you write maker identify as IEN - 10516

YOU . . . NEED THIS BOOK



- Write for booklet N9 — tells the "inside story" of stopwatches. Illustrates patented spare parts compartment. Shows what to look for in a timer. Complete, thorough, interesting. Must reading for users of stopwatches.
- Brand new Clebar catalog . . . illustrates and describes more than a score of stopwatches and chronographs for every timing purpose. Write for your copy today!

CLEBAR WATCH AGENCY · 521 Fifth Ave., N. Y. 17

If you write maker identify as IEN - 10517

at Cleveland Builders Supply

These 7,200 lb. concrete "Dox Planks" move safely on a Robbins and Myers "Freeway"* system. Two 8,000 lb. capacity R & M Twin Hook Hoists on American Monorail Co. track may help solve your "traffic jams." Write today for your copy of Bulletin 875, describing these versatile hoists.

**Materials handling on a separate overhead level.*

TAKE IT UP WITH **ROBBINS & MYERS** INC
HOIST AND CRANE DIVISION, SPRINGFIELD 99, OHIO
MOTORS HOISTS CRANES FANS MOYNO PUMPS

If you write maker identify as IEN - 10518

A-1035

EASTON Furnace Cars

EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

NEW YORK • PHILADELPHIA • PITTSBURGH

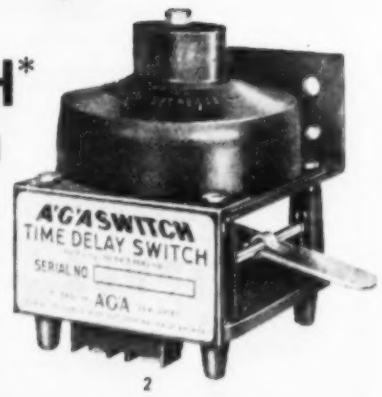
If you write maker identify as IEN - 10519

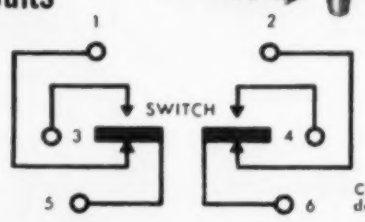
FIRST

of a series of important new product announcements from AGA. Watch these pages next month for the introduction of another field-tested AGA development.

NEW — AGASWITCH*

Time Delay Switch ...to introduce time delays into electrical circuits





Circuit diagram, double pole unit

Adjustable—time delays from .1 second to 10 or more minutes
Manually operated, pneumatically timed
Only 3½" x 2½" x 2½" over-all
Both single and double pole types
Accurate, adaptable, compact and inexpensive

Write for details or application engineering assistance. Address Dept. A4-92

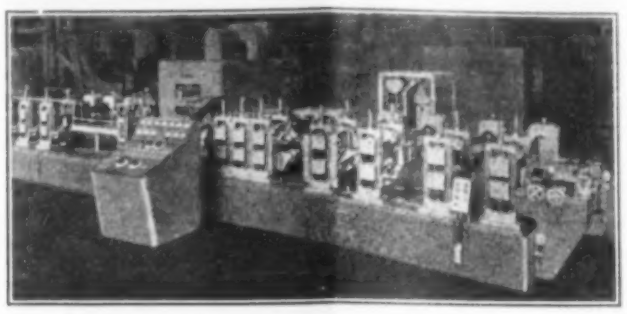
*ESNA Trademark

AGA Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey
Pioneers in pneumatic timing

If you write maker identify as IEN - 10521

TUBE MAKING . . Continuous machine makes welded tube from metal strip

Source: YODER COMPANY
5555 Walworth Ave., Cleveland 2, Ohio



Built to specific order

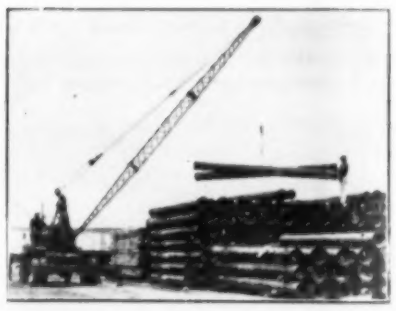
Non-ferrous strip is fed into one end of this new machine to pass through a number of roll stations where the flat strip is formed into the shape of a tube. This form then passes through a short inductor coil where current travels around the tube surface and flows along the converging edges of the unwelded tube to and from a nearby point of convergence which is substantially beyond the induction field and close to the center line of a set of rolls. At this point the tube edges are pressed together and the weld is completed. The tube then continues on through the finished rolls to issue at the opposite end.

Speeds range from 40 to 120 fpm. depending upon the metal, gage and diameter of the tube. The machine represents further development of the continuous equipment, previously described IEN-5396-46, to handle ferrous strip. That initial development had capacity for steel pipe and tube to about 4 in. in diameter at speed from 150 to 250 fpm. Capacity in the new machine ranges from ¾ to 4 in. with gage at 0.025 to 0.134 inch. Larger equipment is in production for tube to 8 in. in diameter.

If you write maker identify as IEN - 10522

CRANE . . Power hydraulic boom and winch mount on 2½ ton truck

Source: PITMAN MFG. CO.
302 W. 79th Terrace, Kansas City 5, Mo.



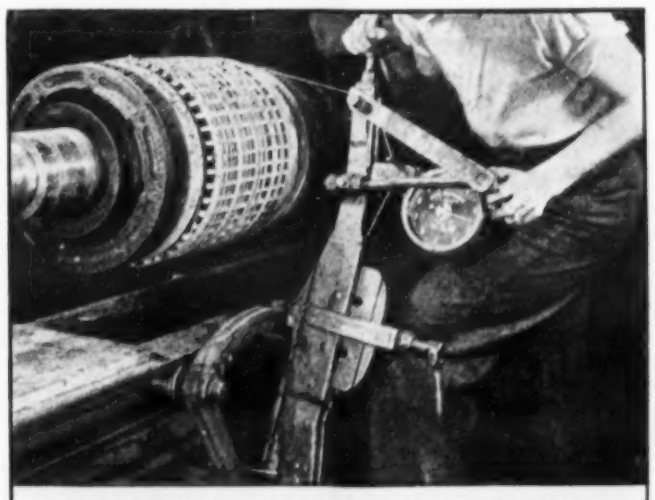
For general duty

Model 80 is new design in the Hydra-Lift line of truck mounting cranes, previously described IEN-7760-52. Capacity is to 4 ton on a 25-ft. boom. Additional boom lengths are available to a total of 50 feet. The longest will handle 1,000 pounds. Assembly on a truck bed requires 40 in. back of the cab for the equipment.

Operation is by power takeoff from the truck engine to a hydraulic pump that provides for swing through a 180-deg. arc and to two winches that handle the load and raise and lower the boom. The load winch can be operated by power for movement down as well as up, or it can be permitted to rotate free under control of a foot brake for fast or slow lowering. Control centers at three levers beside the crane A-frame.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10523



MEASURING TENSION IN A MOVING WIRE WITH A DILLON DYNAMOMETER

13 different capacities from 0-500 lbs. up to 0-100,000 lbs. Compact, light weight. Supplied with max. pointer and shackles. Instantly reads load applied by hoists, air pistons, turnbuckles, etc. Overload protected.

SALES REPS.: SOME TERRITORIES OPEN. WRITE

WRITE FOR ILLUSTRATED LITERATURE AND FREE TENSILE STRENGTH COMPUTER

W. C. DILLON & CO., INC. 14620K KESWICK ST., VAN NUYS, CALIF. (Suburb of Los Angeles)

If you write maker identify as IEN - 10524

G.E. Announces . . . New d-c Portable Instrument

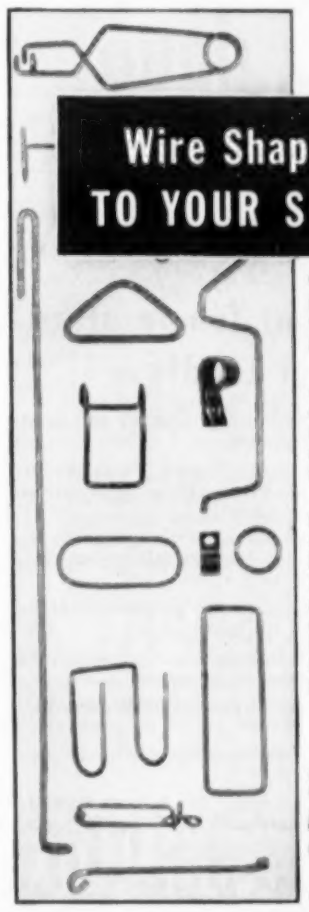
- Accurate within ½ of 1% of full scale
- Molded window allows more light on 5½" scale
- Built to withstand shock and vibration with spring-mounted jewel bearings
- Prices begin at $75.00*

For details, contact your G-E Apparatus Sales Office, or write Section 602-261, General Electric, Schenectady 5, N. Y.

*Mfgr's suggested retail price

GENERAL ELECTRIC

If you write maker identify as IEN - 10525



Wire Shapes and Forms TO YOUR SPECIFICATIONS

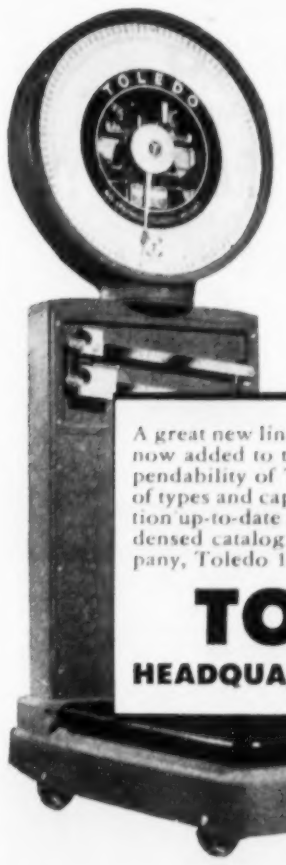
● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 10526



new

44 Ways Better

A great new line of Toledos! *44 new features* are now added to the traditional accuracy and dependability of Toledo Scales. Complete range of types and capacities. Get your scale information up-to-date . . . write today for the new condensed catalog No. 2001. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO
HEADQUARTERS FOR SCALES

Model 2181 —New version of the world's most widely used portable dial scale.

If you write maker identify as IEN - 10527

Famous Holes

H & K Perforated Holes

The Port Hole—it frames the smiles of those who are enjoying the delights of life on shipboard. And, many a smile has likewise been produced by *H & K Precision Perforated Holes* when they put an end to production delays and high costs in screening, grading, separating and other industrial applications.

Our more than 70 years experience permits us to satisfy your most difficult requirements with precision perforating of thousands of hole sizes, shapes and patterns — in all the metals; including hard to perforate stainless steel and Monel; in hardboard, plastics and other materials which come in plates, sheets or coils.

If it can be perforated— H & K can perforate it!

The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Ill.
114 Liberty Street, New York 6, N. Y.

If you write maker identify as IEN - 10528

LITTLE DIAL...

Tells big story about Temperature, Pressure or Load!

The dial is only 6" in diameter, but bold numerals and graduations make it easy to read at a glance.

For Temperature, mercury, gas, organic liquid (Monolex) or vapor actuated systems to fit nearly every type of application. Ranges from minus 125°F. to +1200°F.

For Pressure, range spans from 12 psi to 20,000 psi are available using Bourdon springs or C springs of appropriate metals for required service.

For Load, standard tension and compression load elements are incorporated to use a new mercury Bourdon spring.

New Movement Design minimizes linkage error, means more dependable accuracy throughout the range span.

Fume and moisture proof case may be face or flush mounted, panel or field.

Electric alarm mechanisms, easily and quickly adjusted—optional.

Ask your Taylor Field Engineer, or write for **Bulletin 98214.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 10529

photocopies in **SECONDS!**
with revolutionary **NEW** single unit

TRANSCOPY DUPLEX

Anyone can learn to operate Transcopy Duplex in a few minutes. Copies any original . . . written, printed, or drawn—up to 14½" wide and any length. And this compact all-in-one machine fits on one end of an office desk! No darkroom—no running water—no drying time. It's easy to install—connects with any standard electrical outlet.

GET ALL THE ANSWERS IN FREE FOLDER

Remington Rand

PROFIT-BUILDING *IDEAS* FOR BUSINESS

Room 1143, 315 Fourth Avenue, New York 10, N. Y.

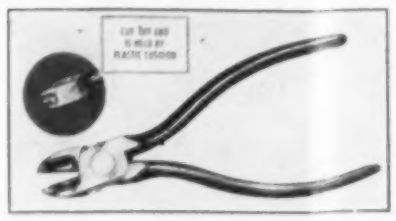
Gentlemen: Please send me a copy of folder P344, "In Seconds . . . One Machine . . . Exposes! Develops! Prints!"—about Transcopy Duplex.

NAME _____ POSITION _____
FIRM _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 10530

CUTTING . . Plastic throat plier cuts and then holds the cutoff piece

Source: UTICA DROP FORGE & TOOL CORP.
2413-17 Whitesboro St., Utica 4, N. Y.



Patented design

Cuts can be made in wiring inside a housing without danger of dropping a cut piece with this new Cushion Throat cutting plier. Plastisol tough rubbery cushions are bonded beside the cutting edges in the throat of the tool. They grip and hold the cutoff piece so it can be lifted out for disposal.

Short pieces also are prevented from flying when cutting spring wire. The new construction can be specified on any of the company's diagonal or side cutting pliers for an added charge of $1 over the list.

If you write maker identify as IEN - 10531

METER . . Telemetering equipment transmits and receives multiple signals

Source: BRISTOL COMPANY
107 Bristol Road, Waterbury 20, Conn.

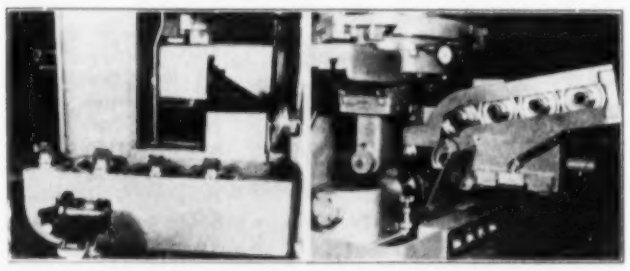
Bulletin 1710 for details

As many as 15 remote signals, covering process variables, can be measured, transmitted and received on separate instruments over a single circuit by new multiplexing equipment in the company's Metameter line. The signals can be taken at separate locations or areas and transmitted any distance to the receiving instruments over the single circuit.

Pressure, vacuum, liquid level, flow, temperature, motion, voltage, current, loading, are representative of the variables that can be metered. The transmitting circuit can be a telephone line, carrier current, radio or microwave, or a 15-channel rental line, available from the telephone company.

If you write maker identify as IEN - 10532

You are looking at an automatic setup for gear shaving on a combination machine and conveyor built by Michigan Tool

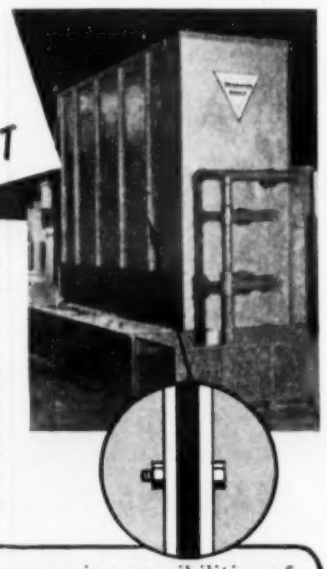


Co., 7196-73 E. McNichols Road, Detroit 12, Michigan. In the right hand view is the infeed chute over which the gears roll to the Model 870 "underpass" machine. To the left, the gears are rolling from the machine and are turning over to come out flat on a chain belt conveyor. The gears are 6¼ in. in greatest diameter. Production is one shaved and inspected gear every 15 seconds from the new combination machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10533

DURKEE-ATWOOD
DOR-TITE KEEPS IT WATER-TIGHT



Says Despatch Oven Company Engineer

A leading producer of spray-paint booths, Despatch Oven Co., Minneapolis, uses Dor-Tite for water-tight gasketing between metal panels. Soft and resilient sponge rubber, Dor-Tite prevents seepage from the booth's water curtain . . . seals out dust and air. Dor-Tite cuts production costs because it comes in exact widths and thicknesses needed, requires no trimming, applies swiftly with its own factory-applied adhesive back.

Investigate the money-saving possibilities of DURKEE-ATWOOD DOR-TITE applications in your business . . . check its amazing versatility. DOR-TITE, because of its *patented built-in fabric base* does not stretch during application . . . does not creep back and pull loose after application as do many other types of sponge stripping.

Another D-A product: Bulk Sponge Rubber for industrial uses; to 36 inches wide; thickness ⅛ to 1 inch; in specified lengths.

DURKEE-ATWOOD COMPANY
Dept. IE 97, Minneapolis 13, Minn.

If you write maker identify as IEN - 10534

IMPROVED TURNBUCKLES

have

NEW EYE DESIGN

HEX ENDS

Laughlin's exclusive pear shaped turnbuckle eyes were designed to eliminate need for special shapes. It's the only eye that will take the ear of a shackle one size smaller than the turnbuckle. The shape makes it stronger than a round eye. It looks better and works better. The next time you need turnbuckles order Laughlin and see for yourself.

All Laughlin turnbuckles have hexagon ends and rugged reins. Easily adjusted with a wrench. Wheelabrated finish dipped in a rust preventive or hot dip galvanized.

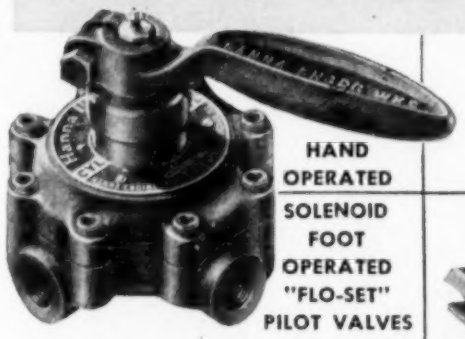
The Full Line of Wire Rope & Chain Fittings

LAUGHLIN

THE THOMAS LAUGHLIN CO.
81 Fore St., Portland, Me.

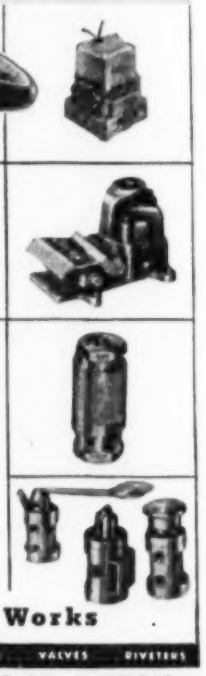
If you write maker identify as IEN - 10535

use Hanna Valves *for exacting* CONTROL



HAND OPERATED

SOLENOID FOOT OPERATED "FLO-SET" PILOT VALVES



Hydraulic and pneumatic cylinder performance is dependent on the efficiency of the control valves used. That's why it pays to use Valves made by a leader in cylinder manufacture. For more than fifty years, the Hanna name has been synonymous with quality. With Hanna Valves, you have a selection to meet every cylinder operating need, plus the advantages of Hanna engineering services. Get your local Hanna Representative's name from your classified telephone directory or write for complete Valve data.

Hanna Engineering Works

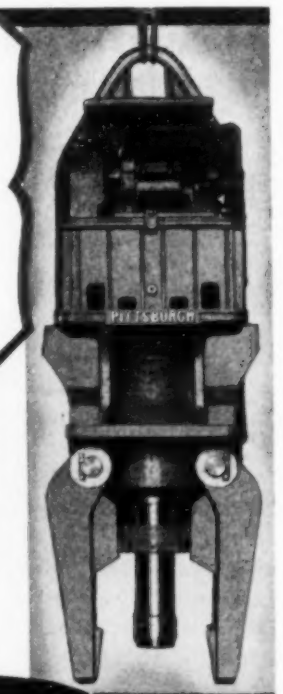
HYDRAULIC AND PNEUMATIC EQUIPMENT . . CYLINDERS . VALVES . DIVERTERS

1748 ELSTON AVENUE • CHICAGO 22, ILLINOIS

If you write maker identify as IEN - 10536

PORTABLE INGOT STRIPPER

can do your job



- **MORE ECONOMICAL**
- **MORE FLEXIBLE**

than conventional equipment

Write today for complete technical data

pittsburgh ENGINEERING & MACHINE CO.

316 FARMERS BANK BLDG., PITTSBURGH 22, PA. • PLANT AT GLASSPORT, PA.

DIVISION OF PITTSBURGH STEEL FOUNDRY CORP.

If you write maker identify as IEN - 10537

NOW! AN IMPROVED LOW COST CASTER

with Hardened Raceways Unbreakable Fork and Top Plate

SERVICE PRESSWELD CASTERS

STRONG! AGILE! QUIET!

Here, at last, is a truly efficient, light-weight caster in the low-cost field. Ideal for Dollies, Racks, Box Trucks and similar applications in the moderate capacity range. Many features usually found only in high price casters provide for years of trouble-free performance. Get PressWelds — and get SERVICE quality at low cost.

Write for sizes, capacities and low prices

INDOOR-MILES Made EASIER and SAFER

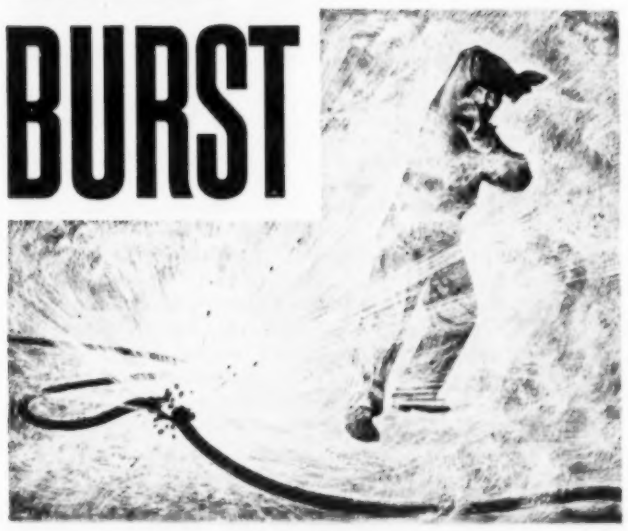
SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.

See your Classified Telephone Directory for Nearest Distributor

If you write maker identify as IEN - 10538

Now...a steam hose that CAN'T BURST



...it's NYB&P's "HY-TEST" hose

Hy-Test just *can't* burst and spray out live steam ...steam that can scald and even kill! Here's why. Hy-Test hose is reinforced with several rubber-encased plies of closely-woven *braided-steel wire* that prevent sudden failure.

After long and severe service, harmless seepage through these blowout-proof plies provides ample warning of the need for replacement.

Add to this safety feature a specially-compounded steam-resistant inner tube, a breaker ply of spiraled asbestos cord that keeps the outer surface cool, and an extra tough, abrasion-resistant cover and you have a super-service, super-safe hose for super-heated steam—Hy-Test steam hose! It's made to withstand working pressures up to 200 pounds.

Your local NYB&P Distributor can supply you with Hy-Test—and other superior quality steam hose for less severe service. Follow his advice for maximum hose value...with maximum safety!

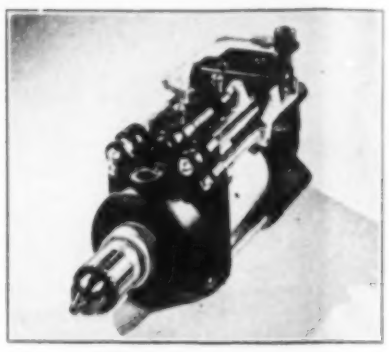
NYB&P NEW YORK BELTING & PACKING CO. 1 Market St., Passaic, N. J.

America's Oldest Manufacturer of Industrial Rubber Products

If you write maker identify as IEN - 10540

DRILLING . . Air hydraulic head, 4 in. stroke, rates 1/2 in. in steel

Source: HAUSE ENGINEERING
811 South Pleasant, Montpelier, Ohio



Model 14, 30 pounds

Holomatic trade names new combination of pneumatic motor and power cylinder with a piston fed rotating spindle and controls for cycle operation. Compressed air from a shop line drives the motor and supplies thrust for the feed movement. Hydraulic fluid in the cylinder passes through control ports to regulate feed and retraction movements of the spindle.

The air motor is available in capacities to 3/4 hp. for rotation at 500 to 15,000 rpm. The unit can be mounted in any position and set up for manual or automatic cycling. The spindle is equipped with a standard chuck.

If you write maker identify as IEN - 10541

INSULATING . . Baking varnish impregnates heavy electrical equipment

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

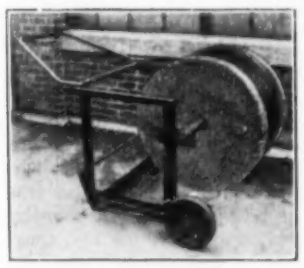
Technical data upon request

GE-9615 is a new clear baking varnish to provide a tough, flexible insulation on coils operating continuously at 150 deg. C. or, for short periods, at 175 deg. C. It bonds well to Mylar and to silicone-glass insulation. In addition to its intended use in generators, transformers, motors, it can be employed as the binder for cotton or glass served wire and as a finish coat over Class-H insulation to improve the bond, assist in cleaning and to protect against penetration of moisture. The material is supplied as a 50 per cent solids solution in diacetone alcohol thinner.

If you write maker identify as IEN - 10542

TRUCK . . Special hand design to pick up and carry loaded reels

Source: LEWIS-SHEPARD INCORPORATED
190 Walnut St., Dept. R-28, Watertown 72, Mass.



Brake holds position

Adjustable supports can be set at the front of this new truck to match the center height of a given reel. Then the truck is tilted forward and back to get under and pick up a bar through the reel center. The frame is made of structural parts with a tubular steel handle. Mounting is on two wheels and two casters. The unit can be specified for a range of reel sizes and weights.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10543

thousands of users PROVE "HI-TEMP" C-5 THREAD COMPOUND IS BEST FOR ALL STUD THREADS and STAINLESS STEEL APPLICATIONS

- ✔ speeds up dis-assembly time
- ✔ prevents stud breakage
- ✔ eliminates pitting of stainless steel

NO MORE FROZEN OR GALLED STUDS ...EVEN AT 1800°F

Let us SEND you a *FREE SAMPLE* so you can PROVE to YOURSELF that C-5 will lick your toughest stud breakage problems!

To assure easy maintenance on products having threaded assemblies many leading product engineers have specified the use of Fel-Pro C-5 as an anti-seize coating on stud threads prior to final production line assembly.

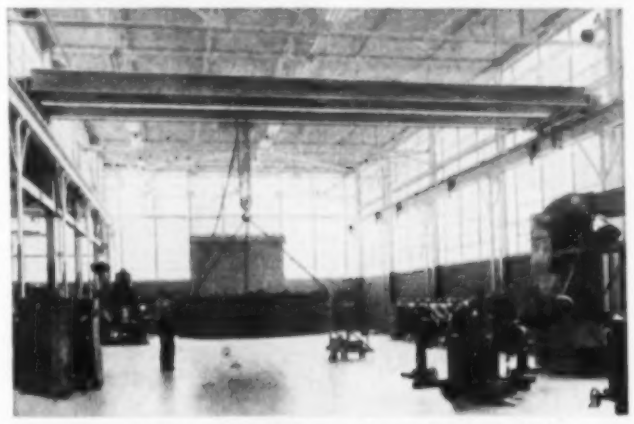
Fel-Pro's exclusive Colloidal-Copper formula allows for easy separation and reduces stud breakage of threaded assemblies after long exposure to extreme temperatures. It eliminates pitting of stainless and alloy steel even where dissimilar metals are joined.

Conduct your own tests with C-5 "Hi-Temp" at our expense. Write for Free Sample and complete data sheet TODAY!

FELT PRODUCTS MFG. CO. 1523 Carroll Ave., Chicago 7, Ill.

If you write maker identify as IEN - 10544

NORTHERN HI-LIFT OVERHEAD CRANES



For Safety—Durability—Dependable Operation with minimum maintenance—these NORTHERN HI-LIFT CRANES are especially developed for low headroom operation and floor control. Let us send you further details in

BULLETIN HL-115-R

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 10545

Tough...

FOR THE TOUGH JOBS!

BIDDLE

Shackle Bolts

BIDDLE Shackle Bolts *are* tough. They're made to take the load where hardened and ground bolts, drilled and tapped for grease fittings, are needed. Made from 1020 steel, BIDDLE Shackle Bolts are knurled under the head for locking, threaded and cotter drilled for SAE Castle Nuts, and drilled, tapped and threaded for standard grease fittings. They are carburized, hardened to Rockwell "C" 50-55 and are ground. BIDDLE Shackle Bolts are available in 66 sizes from 9/16th inch to 1 1/4 inch in diameter and from 3 1/4 inch to 8 inches in length. Special sizes to customer specifications. Small quantities available in stock sizes. If you are looking for a tough bolt for the tough jobs . . . BIDDLE Shackle Bolts fit your needs.

Write today for more complete information and specifications.

NATIONAL SCREW MACHINE PRODUCTS ASSOCIATION

BIDDLE SCREW PRODUCTS COMPANY SHERIDAN, INDIANA

If you write maker identify as IEN - 10546

Are You Wasting Dollars Trying to Save Pennies On Cut-Off Jobs?

Wells No. 8 with wet cutting system.

A Wells Metal Cutting Band Saw pays for itself in savings

IT'S easy to fool yourself about costs on your cut-off jobs. Perhaps you say, "It doesn't amount to much, why worry about how we do it." You'd be surprised. Look at what a Wells Saw gives you—Modest first cost with a model for every budget . . . Rugged, heavy duty construction for minimum cost per year . . . Fast, continuous band saw cutting . . . Accurate cutting to minimize subsequent machining . . . Simple operation that requires no special skill.

To cut your cut-off costs, ask your Wells Distributor for further information or write direct.

Standard Wells Saws: No. 49A—3 1/2" x 6 1/2"; No. 5—5" x 10"; No. 8—8" x 16"; No. 12—12" x 16". Wet cutting systems available for Nos. 5, 8 and 12. Automatic bar feed available for Nos. 8 and 12. Special machines for capacities to 48" x 48".

Products by Wells are Practical

Wells

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as IEN - 10547

Sabin COIL TRUCK

a most modern method

of picking up and moving strip or wire coils, box strapping, wheels, tires, lathe chucks or face plates, etc.

SAVES TIME, LABOR

You run this truck up to article, passing arm through hole, then pull back on handle to pick up load. Follower wheel minimizes trucking effort.

WRITE FOR BULLETIN

The Sabin Machine Co.
6540 Carnegie Avenue
CLEVELAND 3, OHIO

Other Sabin Trucks — DRUM and BARREL TRUCKS, TOTE PAN, BOX, CARBOY, KEG TRUCKS.

If you write maker identify as IEN - 10548

Here's

what every metal working plant has been looking for . . .

A "PUTTIN'-ON-TOOL"

Save real money—salvage thousands of dollars of undersized parts, worn tools and gages by chrome plating them right in your own plant with a Chromaster!

This compact unit deposits a smooth wear-resistant finish twice as fast as conventional methods. Its simplified operation gives you a control over deposit thickness so accurate that your finish grinding operation is usually eliminated.

Chromaster will increase the life of your cutting tools and wear parts three to ten times. Send today for complete details on the Chromaster that fits your requirements. A.3.4

Chromaster
INDUSTRIAL CHROME DIVISION
WARD LEONARD ELECTRIC CO.
33 South Street, Mount Vernon, N. Y.

If you write maker identify as IEN - 10549

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)						
113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
11 West 25th St., New York 10, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16¼" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
ADDRESS _____

If you write maker identify as IEN - 10550

TESTING . . Fault locator for aerial and buried electric cable

Source: JAMES G. BIDDLE CO.
1314-18 Arch St., Philadelphia 7, Pa.

Bulletin 65

Output is to 15 kv. dc. and discharge capacitance is 2 muf. in this new Model-4 fault locator transmitter. The unit weighs 150 lb., operates on 110-volt ac. The transmitter builds up and discharges in 3-sec. intervals when operating on 60-cycle ac. and, while it is in operation, a pickup coil is applied to various points along the cable being tested. An indicating instrument in the detector, to which the coil is connected, shows whether the fault has been reached or passed.

The transmitter can be used independently as a source for high voltage dc., for proof testing and for Murray Loop bridge measurements. The equipment is designed for hard service. Structural parts are a combination of steel and aluminum. Exterior finish is gray enamel.

If you write maker identify as IEN - 10551

TUMBLING . . Motor driven barrel, neoprene lined, for burring operations

Source: WHITE-ROTH MACHINE CORP.
1934-38 W. 19th St., Lorain, Ohio

Model 2000

Burrs, corrosion, welding and cutting slag are removed from work pieces with this new Burr-Master tumbling barrel. It is made of welded steel with an aluminum door. Both the barrel and the door are lined with neoprene to protect and minimize tumbling noise.

The barrel measures 32 in. in diameter by 48 in. in length. It has capacity for 1 ton of work. Overall length is 62 and height is 72 inches. Construction includes a variable speed drive for operation at 5 to 30 rpm., pushbutton control to position the door for loading and unloading, and a timer that shuts the drive down at the end of a predetermined operating interval.

If you write maker identify as IEN - 10552

A manufacturer of rubber printing rollers is required to remove old rubber from worn and damaged rolls in a salvage operation. It was a tough job until Lepel High Frequency Laboratories, 55th St. and 37th Ave., Woodside 77, N. Y., supplied one of its induction heating generators and designed a special heating coil. The metal shaft heats up quickly when a roll is placed inside the coil. The rubber is melted from around it and the shaft can be withdrawn freely. The company will send you a 40 page catalog showing this job and many others that are being handled in its induction equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10553

Bellows Transfeed WORK FEEDER

Meet the appetites of machine tools with Bellows Transfeed Work Feeders. Complete, air-powered, electrically controlled 2-station feeder . . . with auxiliary table for light milling operations. Transverse action powered by full 6" stroke, permitting loading or unloading at one end of table while operation occurs at other end. Control may be by push-button, foot switch, or by interlock with the machine tool.

WRITE FOR BULLETIN IEN 953

The Bellows Co.
AKRON 1, OHIO

810A

If you write maker identify as IEN - 10554

Extruded or Roll Formed?

WERNER CAN PRODUCE IT and **Heat Treat—too**
in T4–T6 Tempers

IN	VOLUME
TO	PRECISION
WITH	SERVICE

Here are a few of the many products on which Werner shapes are used...

Trailers, Trucks & Buses, Railway Coaches • Aircraft • Furniture • Appliances • Electrical Fixtures • Storm Doors & Windows, Sliding Door Hardware • TV Antenna Tubing & Masts

One source for your extruded or roll formed requirements that will give you all the service you need. Over 100,000 feet of floor area . . 30 years of experience and millions of feet of custom extruded and roll formed sections make Werner a reliable, resourceful and skilled supplier. Also available—Anodizing, Cutting, Punching, Bending, Welding, Polishing, Assembly. WRITE for facilities folder *today*.

Werner

R. D. Werner Co., Inc., 295 Fifth Ave., New York 16, N. Y., Dept. 1-5
Factories: Greenville, Pa.; Oshawa, Ontario, Canada

If you write maker identify as IEN - 10555

"Get Out From Under-"

Federal "J" Siren cuts through high noise levels to save lives!

You never know when a cable might break or a load might shift. Unless warned, workers on the craneway face swift falling death from above.

Shouting won't do it, nor will an ordinary signal. You need a powerful, distinctively high-pitched Federal "J" siren . . . a siren that overcomes intensely high noise levels. The Federal "J" is a heavy duty siren specifically designed for electric cranes and operating long periods of time repeated 24 hours a day. Where heavy duty, high-frequency of operation is necessary — where distinctive, penetrating sound protection can save lives — install a Federal "J" siren.

Write now for Industrial Sirens Bulletin No. 111

FEDERAL ENTERPRISES, INC.
Formerly: Federal Electric Company, Inc.
8745 S. State Street
CHICAGO 19, ILLINOIS

If you write maker identify as IEN - 10556

LAST OFFER!

No. BL50W

HIGH QUALITY PRESSURE BLOWER

AT THE LOW, LOW PRICE OF . . . **$49.50**

Cast aluminum construction. Inlet 5½". Outlet 3½". Enclosed 1/6 hp Westinghouse single phase motor. 115V A-C, 3450 rpm, up to 450 cfm. Immediate delivery. Take advantage of our offer and place order now before price is increased. A wonderful blower for the removal of sawdust, fumes, dirt, for conveying material or for cooling motors, fans and equipment.

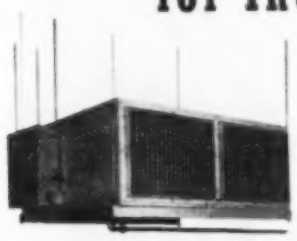
Our competitors prices for blowers of similar size and quality are:

A—$ 80.00	D—$108.00
B—$103.00	E—$125.00
C—$103.00	F—$173.00

STANDARD ELECTRIC
MANUFACTURING CO., INC.
WEST BERLIN 12, N. J.

If you write maker identify as **IEN - 10557**

Controlled Humidification for Industry



Bahnson Type BA-2 Self-Contained Humidifier

Requires only water supply and electrical connection

SOLVES YOUR DRY AIR PROBLEMS AT MINIMUM OPERATING COST!

- HIGH CAPACITY—Evaporates up to 18 gph.
- AUTOMATICALLY CONTROLLED at any desired relative humidity.
- NEEDS NO pump, duct, compressed air, steam or floor space.
- EFFICIENT centrifugal atomization of ordinary city water.
- FLEXIBILITY—Can be used for heating as well as humidifying and filtering.
- MOIST AIR delivered in controlled pattern without droplets.
- EASY TO INSTALL—Just uncrate and suspend from ceiling.
- TROUBLE-FREE—Guaranteed by America's largest maker of industrial humidification equipment.

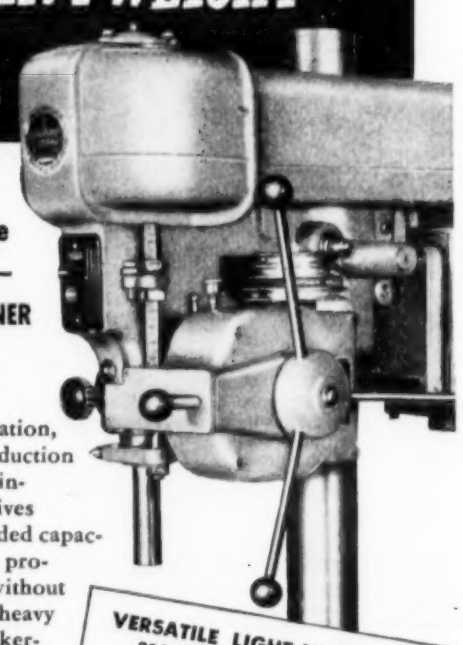
For positive humidity control for one room or your entire plant, check Bahnson's complete line of humidification equipment. Write today.

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION **Bahnson Company** ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

If you write maker identify as **IEN - 10558**

It's no accident that they're known as

LIGHT-HEAVYWEIGHT Drill Presses

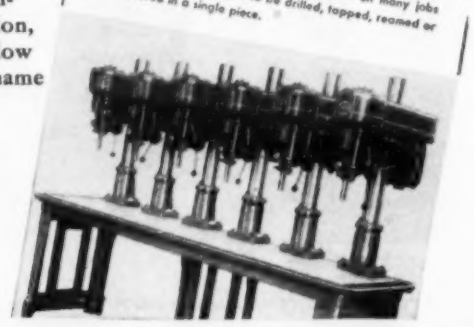


It was done by design— WALKER-TURNER Design

Professional in design and operation, yet light for production machines, this "in-between" line gives industry the needed capacity for short-run production work, without the necessity of heavy investment. Walker-Turner makes 15" and 20" Drill Presses (in Bench, Floor, and Production Models), as well as Radial Drills. For complete information, use margin below to write your name and address.

VERSATILE LIGHT-HEAVYWEIGHT 20" WALKER-TURNER DRILL PRESS MULTIPLE-SPINDLE MODEL

Designed for industrial users where production rate and initial cost are primary factors in the selection of equipment, Walker-Turner 20" Drill Presses operate continuously and accurately at any rate of speed from 400 to 2600 r.p.m. Multiple spindle models (2 to any desired number) are particularly effective in increasing production on many jobs where a series of holes are to be drilled, tapped, reamed or counterbored in a single piece.



WALKER-TURNER walker turner KEARNEY AND TRECKER CORPORATION PLAINFIELD, N. J.

Drill Presses—Hand and Power Feed • Radial Drills • Wood and Metal Cutting Band Saws Tilting Arbor Saws • Radial Saws • Jig Saws Lathes • Spindle Shapers • Jointers • Belt and Disc Surfacers • Flexible Shaft Machines

SOLD ONLY THROUGH TRAINED INDUSTRIAL DISTRIBUTORS

. . . Use this space . . . . .

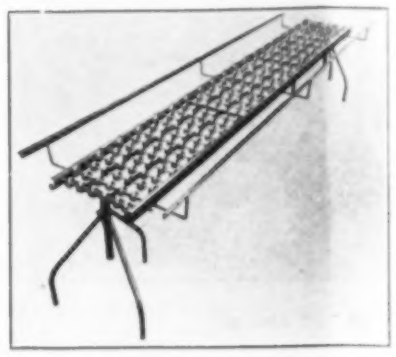
to write for full details and specifications. Walker-Turner Division, Kearney & Trecker Corp., Dept. IE9, Plainfield, N. J.

(Please write your name and address in margin of page)

If you write maker identify as **IEN - 10560**

CONVEYING . . Gravity wheel units with adjustable guard rails on sides

Source: SAGE EQUIPMENT CO. 28-32 Essex St., Buffalo 13, N. Y.



Braced for stiffness

Steel wheels are equipped with grease packed ball bearings in this new gravity conveyor section. The wheels are mounted on cold rolled steel axles between aluminum tube spacers. The side members are 2 by 1 by ⅛-in. steel channels. The guard rails are adjustable through 5 in. on each side.

Four standard widths are 12 to 24 inches. Wheel spacing employs 6 to 36 wheels per foot. The conveyor is available in 5 and 10-ft. straight sections, 45 and 90-deg. curves, gated and Y sections, right and left hand switches.

If you write maker identify as **IEN - 10561**

CORROSION PROOFING . . Cement for use in setting acid brick and tile

Source: DELRAC CORPORATION 131 Mill St., Watertown, N. Y.

Resistant to acids, alkalis

Resiment is a new furane resin cement, low in porosity, high in compressive and tensile strength, resistant to impact and abrasion. It remains serviceable in temperatures to 375 deg. F. The material is shipped as a powder and a separate liquid to be mixed just prior to application in setting acid brick and tile linings for tanks, sewers, towers, floors. It sets in hot or cold weather by internal chemical reaction.

If you write maker identify as **IEN - 10562**

MIXING . . Gyratory machine mounts work on interchangeable tables

Source: NEW BRUNSWICK SCIENTIFIC CO. 8-12 Hiram St., New Brunswick, N. J.

Quiet operation

Speed range is 85 to 285 oscillations per min. for this new Model S-3 Gyratory Shaker. It is supplied with seven interchangeable plastic or metal tables to take glassware ranging in size from 50 to 500 ml. It will handle flasks, test tubes, petri dishes, slides. Dimensions are 23 by 16 by 12½ inches. A built-in timer can be set for any interval to 55 min. or for continuous action. Drive is by a 1/20 hp. motor operating on 110-volt ac. The machine and a metal utility table, with four test tube racks, lists at $290.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10563**

If you write maker identify as **IEN - 10564**

At left: Jacketed 3-Way Plug Cock.

Below: Cutaway section of Jacketed Cock, showing packing gland construction.

H&B ESTABLISHED 1887

Jacketed Pipe, Pumps, Valves and Fittings . . .

Regardless of whether the material is being heated or cooled in the processing, and what heating or cooling medium is being used, H & B jacketed fittings are available for all applications. Steam, hot water or hot oil may be used for heating, cold water or brine for cooling.

H & B can save you money on your jacketed pipe and fitting requirements because we buy all standard size pipe from the mill in carload lots, make our own special flanges in quantities, and are tooled up for making jacketed equipment at lowest possible price. Write for Bulletin J-50.

Hetherington & Berner Inc.
725 Kentucky Avenue • Indianapolis 7, Indiana

If you write maker identify as **IEN - 10565**

NEW!

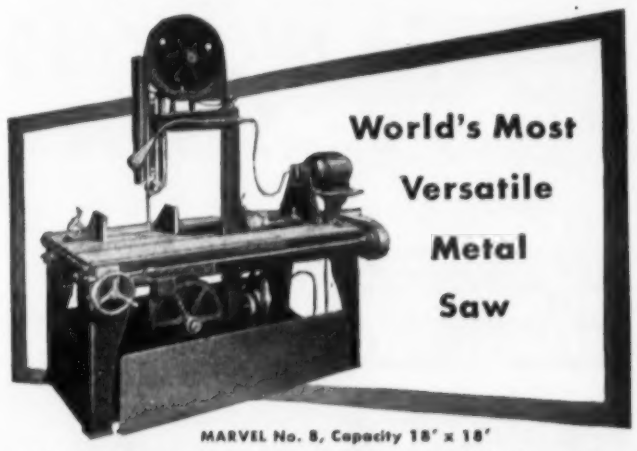
Delpark Filters for Paint Spray Booth Water

Now—through the use of Delpark industrial filters and automatic skimming, paint spray booth operation is more efficient. Hand-skimming, necessary with former methods, is eliminated. Fouled water spray jets and eliminators no longer interrupt spray booth operation. Clean-up labor and spray booth maintenance are reduced to a minimum.

Write today for information on the Delpark Paint Spray Booth Filter now in use in many large automotive plants.

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as **IEN - 10566**



MARVEL No. 8, Capacity 18" x 18"

There is no other sawing machine like it. The work remains stationary. The blade is guided with a 90° twist and power fed vertically through the work. The saw blade and column can be instantly swung and clamped at any angle to 45° either right or left from vertical for miter cutting.

The number 8 MARVEL saw will handle the smallest, as well as the largest work up to 18" x 18". It will cut-off, trim, miter, notch, and split all bar stock, pipe, structural sections, moulding, tubing, or irregular shapes.

Write for our catalog, containing valuable information, enabling you to select a metal saw best suited to your work.

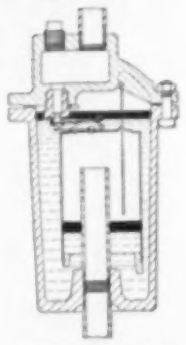
Metal Cutting **MARVEL SAWS** Better Machines-Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

If you write maker identify as IEN - 10567

THIS AIR TRAP
is not stopped by oil

NOW you can get dependable, automatic drainage of water from compressed air intercoolers, aftercoolers, receivers and separators even though the compressor is pumping heavy oil. Any oil reaching Armstrong Inverted Bucket Air Traps collects at the top and is discharged ahead of the water.



Inverted Bucket Air Traps.
Side-inlet side-outlet styles available.

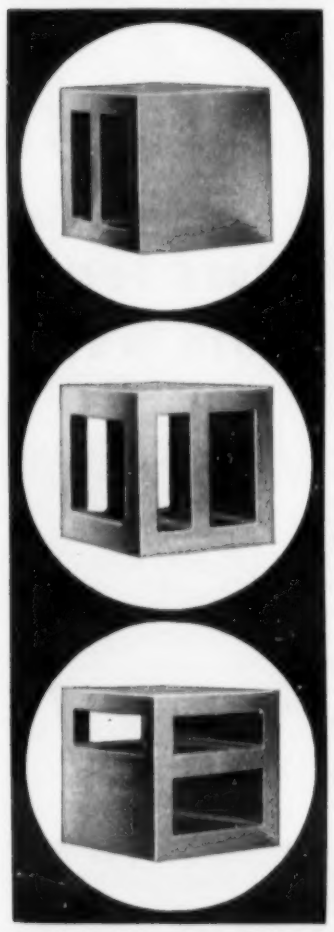
Armstrong Air Traps have a simple, proven design; there's nothing to stick, bind or clog. Stainless steel mechanism resists corrosion. For pressures to 600 lbs. *Guaranteed to Satisfy.*

ARMSTRONG MACHINE WORKS
888 Maple Street • Three Rivers, Michigan

SEND FOR FREE BULLETIN No. 2021 GIVING DETAILS

Manufacturers of the well known ARMSTRONG STEAM TRAP

If you write maker identify as IEN - 10568



3 IN 1
COMBINATION TOOL
CHALLENGE UNIVERSAL BOX ANGLE

This new versatile tool has the clamping facilities of an *angle iron* . . . the stability, balance and accuracy of a *box parallel* . . . the perpendicular flat surface of an angle plate. Made of high grade special analysis semi-steel, heat treated and precision ground. Furnished in two sizes — 6x6x6 and 8x8x8 inches. Other sizes can be made to order.

747

Challenge TRADE-MARK ®

THE CHALLENGE MACHINERY COMPANY
Office, Factories and Show Room: Grand Haven, Mich.

If you write maker identify as IEN - 10569

SAVE TIME, SPACE AND EXPENSE WITH THE NEW
MICROCARD SYSTEM

18,600 FULL SIZE RECORDS FILL 31 (4-DRAWER) FILES
AT A COST OF ABOUT $6,400.00

IN MICROCARD FORM THESE RECORDS CAN BE STORED IN ONE SMALL CARD FILE

AT A COST OF ABOUT $400.00

Spend pennies now where dollars were disappearing! New MICROCARD SYSTEM is the economical, quick to find, read, and refile method of record storage. Figures available on your industry application.

WRITE TODAY For Complete Information.

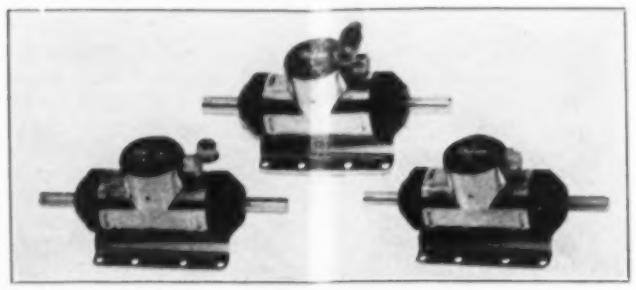
MICROCARD CORP. • READER DIVISION
Box 314D • La Crosse, Wisconsin

Arrangements made with Kodak Ltd. of England to produce a similar reader.

If you write maker identify as IEN - 10570

DRIVE . . Miniature variable speed, disc and roller design, 1/5 to 5 to 1

Source: METRON INSTRUMENT CO.
430-34 Lincoln St., Denver 9, Colo.



Weighs six ounces

Gear adjustment has been added to the company's miniature variable speed drive previously described IEN-4803-51. The new assembly is known as Series 3. It includes three gear designs in the control assembly. These are spur, miter and worm, each for specific service. The unit rates to 2 in. lb. of torque or 0.025 hp. It is suited for speeds to 20,000 rpm.

If you write maker identify as IEN - 10571

COMMUNICATING . . Telephone plugs into plant electric circuits

Source: FEILER ENGINEERING & MFG. CO.
8024-28 N. Monticello Ave., Skokie, Ill.

$42.25 each

A pair, or more, of this new electronic Port-A-Phone plugs into regular outlets in an installed electric circuit to provide for two-way conversation. Operation is featured by sensitive pickup so it is not necessary to be close to the instrument. Reproduction is clear. Controls include a talk-listen lever, a volume adjuster, and an "on-off" switch. Overall dimensions of the mahogany finished housing are 8¼ by 5½ by 6 inches. Weight is 4½ pounds. Operation is on 110-volt ac. or dc.

If you write maker identify as IEN - 10572

Boards are cut to various lengths for box manufacture at General Box Co., 814-18 S. 16th St., Louisville 10, Ky. They are delivered to a large rotating table by a conveyor leading from the saws. Inspectors stand at the table and select the lengths required for a given order. These pieces they stack on trucks for movement to assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10573

AUTOMATIC PROTECTION OR CONTROL for your heating process

. . . WITH
ALNOR PYROTAC

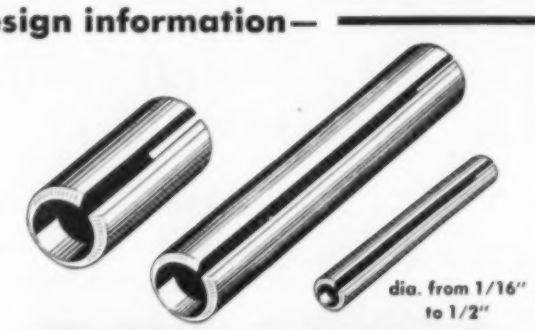
Here's a simple, low-cost way to obtain *AUTOMATIC PROTECTION* against damage due to excessive temperatures . . . safeguard your investment in heating equipment and materials in process. This precision-built instrument constantly indicates temperature of the heated equipment and sounds an alarm and/or shuts down the heated circuit at a safe, pre-set temperature. It may also be used as a *CONTROLLER* on a process requiring shutdown upon reaching a final process temperature—such as ceramic kilns, molds, etc. Automatic thermocouple break protection assures safety if couple or extension wires should break.

Ask your Alnor representative for details on this sturdy, precise instrument. You'll find the price of less than a hundred dollars unusual for an instrument of this type. Write for bulletin that contains complete description and wiring diagrams of actual applications. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 10574

Design information—



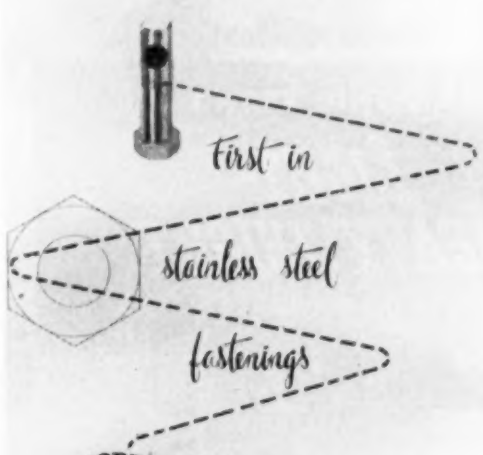
ROLLPIN
. . . the slotted tubular steel pin with chamfered ends

- Easily driven into holes drilled to normal production tolerances
- Self-locking . . . exerts constant pressure against hole walls
- Easily removed with drift or pin punch
- Fits flush . . . is reusable

Offers assembly-time savings over rivets, set screws, straight, serrated or cotter pins, dowels, hinge pins and many others.

WRITE for detailed catalog—Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, N. J. Address Dept. R18-953.

If you write maker identify as IEN - 10575

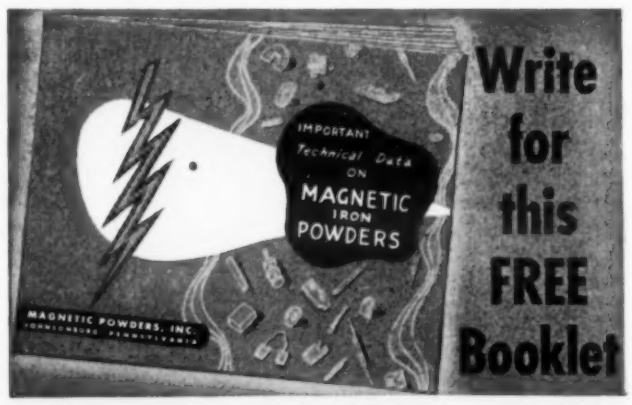


ANTI-CORROSIVE METAL PRODUCTS

behind this symbol is an on-hand inventory of *more than 9,000 items and sizes* of stainless steel fastenings. Ready for immediate shipment, this stock is the largest and most complete in the industry. In addition, a production capacity for large or small quantities of special orders is at your service! A good reason—when you think of stainless steel fastenings—to think FIRST of Anti-Corrosive! *Send for Catalog 53V today!*

ANTI-CORROSIVE METAL PRODUCTS CO., INC.
Castleton-on-Hudson, New York

If you write maker identify as IEN - 10576



Write for this FREE Booklet

CONTAINING IMPORTANT INFORMATION ON

Laboratory Controlled • Quality RAW MATERIALS for ELECTRONIC and INDUSTRIAL APPLICATIONS

MAGNETIC POWDERS INC.
POST OFFICE BOX 247 JOHNSONBURG, PENNA.

If you write maker identify as IEN - 10577

HOBBS

COTTER PINS

LOXIT
Extended Prong

HOBLOK
Hammer-Lock Type

***Locks itself* when hit with hammer!**
No bending of prongs required!

Choose the type that's best for *your* production job! Both are available in steel, brass, stainless steel, and monel.

HOBBS "TANGLE-PROOF" LOCKWASHERS are available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings.

Write now for Hobbs lock washer and cotter pin price lists!

HOBBS MANUFACTURING CO.
Fastener Division
EST. 1882 **40 SALISBURY ST., WORCESTER 5, MASS.**

If you write maker identify as IEN - 10578

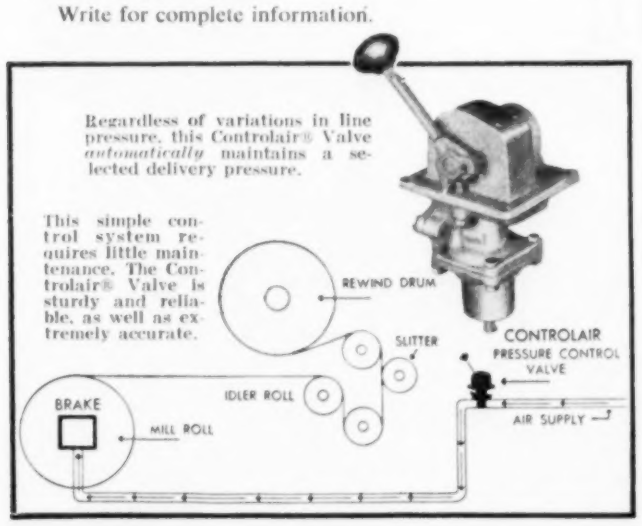
Production increased 50% with Westinghouse Pneumatic Control

● Miro Container Co., of Brooklyn, N. Y., regulates tension on their paper slitter by controlling air pressure to a pneumatic brake on the input roll. The valve formerly used was inaccurate and paper was tearing and interleaving. As a result, production was often delayed.

A Westinghouse Air Brake Co. Controlair® Valve has eliminated this trouble. It is extremely accurate and *automatically* maintains a selected air pressure. With this valve, paper loss has dropped about 10%. And since there now are fewer production delays, about 50% more paper can be slit per day.

You can use a Controlair® Valve wherever you need *variable, controlled* air pressure to operate pneumatic clutches, brakes, cylinders, and actuators . . . by hand lever, foot pedal, or cam.

Write for complete information.

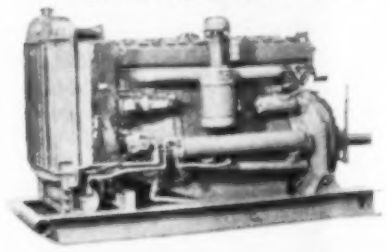


Westinghouse Air Brake COMPANY
INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.
Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co. Ltd., Hamilton, Ontario

If you write maker identify as IEN - 10580

ENGINES . . Six cylinder diesels, standard and super-charged assemblies

Source: MURPHY DIESEL CO.
5315-19 W. Burnham St., Milwaukee 14, Wis.



Ask for "10 Reasons" booklet

Two engines, for operation at 1,200 rpm., with ratings on continuous duty at 185 and 210 hp. and two additional engines to operate at 1,400 rpm. developing 200 and 225 hp., also on continuous duty, have been added to the company's line of six-cylinder diesels. In each case bore and stroke measure 6⅜ by 6½ in. and operation is controlled by the company's own design of variable speed hydraulic servo type governor.

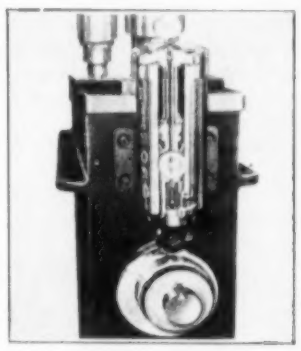
The governor will open the throttle in response to load demand at reduced engine speed. Operation is protected by a control that stops the engine if the lubricating oil pressure falls below a safe minimum. Unit fuel injectors, also the company's design, combine the fuel pump metering control and spray nozzle into a single unit, one for each cylinder. Injector drive is by a roller bearing mounted on anti-friction bearings to contact an overhead cam shaft.

Construction includes force feed lubrication, water cooled tubular oil cooler, a gear type oil pump, lubricating oil filter and fuel filter, fuel transfer pump, centrifugal cooling water pump for delivery at high velocities to the cylinder blocks and heads with circulation through a radiator, thermostats of bypass design in the cooling water circuit, oil bath air cleaner and crankcase ventilator. The cylinders are fitted with replaceable wet type liners made of alloy castings finished to a mirror surface.

If you write maker identify as IEN - 10581

PRESS . . Pneumatic attachment counterbalances varying tool weights

Source: DIAMOND MACHINE TOOL CO.
5109-13 Coffman Pico Road, Pico, Calif.



Ask for Catalog P-30

Standard equipment on the Multi-Max punch presses and shears now includes a new clutch Equilibrator. The attachment counterbalances varying weights of press tools, punches and die plates from one set up to another. It also removes load from the clutch, at the time of disengagement, so there is no disengaging drag.

The unit is operated by a cam. It applies on the crank shaft beneath a roller secured to the piston that operates in the vertical cylinder. Air is compressed, as the press ram comes down after clutch engagement, to retard the movement and make up for added weight of the tools. The action is reversed on the return stroke and upward movement of the ram is assisted so it is riding free at the top of the stroke except for the action of the regular friction brake on the machine. As a result there is no drag on the clutch at disengagement and it will come out freely.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10582

HILD Heavy-Duty PORTABLE VACUUM

Always Ready for Wet or Dry Dirt Removal

No adjustments to make...no filter to change when switching to wet pick-up work. Moisture in vacuum air stream cannot damage HILD Bi-Pass Motor. Special attachments for scores of clean-up jobs. Two sizes: 10 or 40 gallon liquid capacity.

SWEEPS
Dust and Dirt

DRIES
Scrubbed Floors

CLEANS
Overhead Pipes, etc.

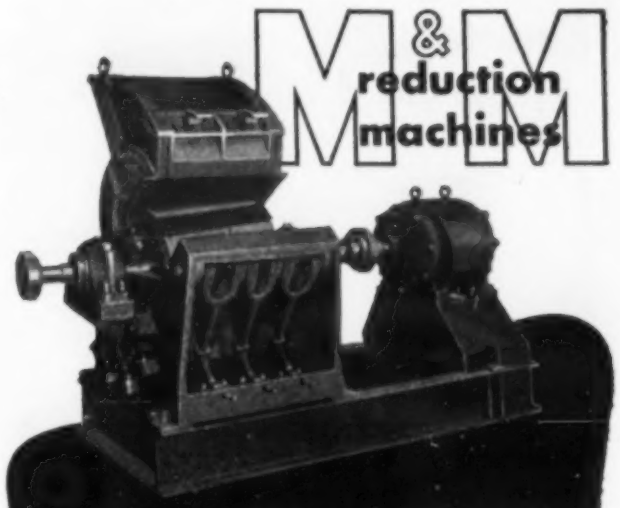
HILD System MAINTENANCE EQUIPMENT & SUPPLIES

Write for FREE CIRCULAR

HILD FLOOR MACHINE CO.
740 W. Washington Blvd., Dept. IEN-9, Chicago 6, Ill.
Factory Branches
250 E. 43rd St., New York 17, N. Y. • 4271 W. Third St., Los Angeles 5, Cal.

If you write maker identify as IEN - 10583

M & M reduction machines



M & M Reduction Machines are rapidly gaining favor in industry for converting waste to uniform size for easy handling and in many cases into valuable by-products. Cut your disposal costs with an M & M Reduction Machine. Send us your problems.

MITTS & MERRILL
1014 South Water • SAGINAW, MICHIGAN

If you write maker identify as IEN - 10584

HEAT INSIDE *spotted where you need it*

FUMES OUTSIDE *where they belong*

SAFE **HERMAN NELSON**
PORTABLE AIR HEATERS

Get safe heat, efficient heat, wherever you want it. Say goodbye to winter slowdowns with Herman Nelson Portable Air Heaters. There is absolutely no danger from carbon monoxide, no smoke, no fumes, no sparks. Combustion products are vented off—clean, pure, heated air is directed to the working area—through flexible canvas ducts. Models available from 125,000 to 450,000 BTU. Oil or gasoline fired. Electric or gasoline powered.

Get all the FACTS about ALL Portable Heaters. Write American Air Filter Company, Inc., Dept. 102, Moline, Illinois.

If you write maker identify as IEN - 10585

New DRY TAMP PERMA*Mix* Floor Patch

Don't stop traffic to repair floors—use Permamix, the new all-temperature DRY TAMP floor patch.

DRY TAMP MEANS SPEED • No sticky mass to dig out of the drum or to handle • Permamix dry pours • sets instantly • feather edges perfectly • no production delays • non-skid surface.

ALL TEMPERATURE • Won't freeze • can be stored or used in any temperature • will store indefinitely • a stock room item • will not "set" in drum whether open or covered. Mistakes just can't happen. Tamp in place and traffic rolls.

CUTS MAINTENANCE COSTS on concrete, brick, tile or asphalt floors • no special equipment or skill needed • a one man job • comes in durable 50 lb. net wt. fibre drums • solve your floor patching problems for good.

Write for Details Now!

PERMAMIX CORPORATION
230 N. LaSalle Street • Chicago 1, Illinois

If you write maker identify as IEN - 10586

How to train SAFE FORK TRUCK OPERATORS

a complete program in outline form . . .

FREE!

WHETHER you operate a fleet or a single truck, you *need* an organized operator training program. This booklet sets it up for you. Covers driver and instructor selection. Provides a full outline of classroom and driving instruction, maintenance and safety procedures. *Write today* for your copy. Lewis-Shepard Products, Inc., 1033-9 Walnut St., Watertown 72, Massachusetts.

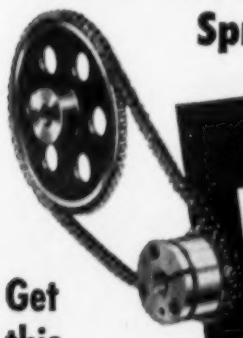
MULTIPLY MANPOWER · LEWIS-SHEPARD

LEWIS-SHEPARD

The "MASTER" Line

If you write maker identify as IEN - 10587

Sprocket Savings!



lower NEW PRICES

BOSTON Gear SAME QUALITY

Get this NEW SPROCKET CATALOG SUPPLEMENT SC-2

Complete buying information on Standard Sprockets and on new line of SHOLD-A-GRIP Interchangeable Tapered Bushings and Sprockets . . . also Chain, and new Chain Breaking Tool.

ASK YOUR BOSTON Gear DISTRIBUTOR

for the new Sprocket Catalog, or write Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 10588

Wear Defying

SILVER KING

INDUSTRIAL COUNTERS

Silver Kings challenge comparison! On casual examination, critical analysis, or the most exhaustive life tests they come out miles ahead.

Built rugged as an army tank, they operate smooth as a watch. Extra heavy shaft, oversize bearings, life-tested parts, light weight number wheels, tamper-proof reset, all-steel housings, chrome-plated finish—you can install Silver Kings with assurance of maximum dependability, longest life, lowest upkeep cost.

Available in Stroke and Revolution types, 5- or 7-digits, right or left shaft, knob or key reset.

Ask your PIC Representative to show you a Silver King or write us.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 10589

TRUCK . . Revolving head attachment to lift, carry and dump rollover boxes

Source: RAYMOND CORPORATION
35109 Madison St., Greene, N. Y.

Bulletin 703 and 732Y

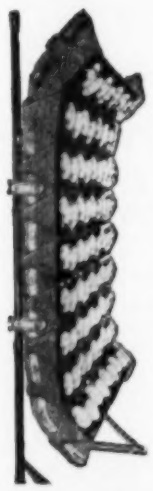
Load capacity is 3,000 lb. for this new attachment in which a pair of forks apply in pockets in a rollover load carrying box. The attachment rides the elevating mechanism on the truck and connects into the hydraulic circuit through a control valve on the truck. The head can be lifted and rotated in either direction to pick up, carry and dump a loaded box.

The attachment forks can be specified at 30, 36 or 40 in. in length. Lowered height is 3 inches. Elevated height is 88 or 118 in. in two available truck assemblies. Free lift is 41 inches. A second capacity, 2,000 lb., provides maximum elevation at 100 or 130 in., free lift at 35 inches. Turning arc is through 360 degrees. Turning speed is 8 rpm. empty and to 4 rpm. with a capacity load.

If you write maker identify as IEN - 10590

DRYING . . Infrared equipment mounts reflector lamps in sections

Source: WIL-SON MFG. COMPANY
702 Huston St., Cloverport, Ky.



Mounts on steel stand

Standard sections in this new infrared equipment measure 32 and 48 in. in length. Each lamp row has two panels in metal backed asbestos insulated construction. Sections are individually adjustable from the outside. The Patent-Flex connection between sections permits tight multiple assembly into a unit.

Contour can be changed to meet changing work requirements. The equipment is suited particularly for large area side heating. It is kept in clean working order by wiping the lamp faces at intervals.

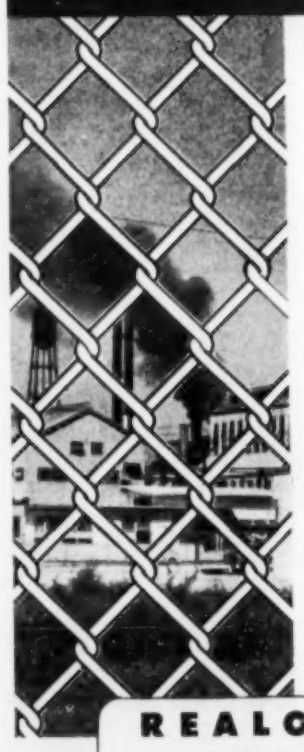
If you write maker identify as IEN - 10591

Bronze bar stock, continuously cast by American Smelting and Refining Co., 1158-62 State St., Barber, N. J., is employed by American Type Founders for bed track guides on its Little Giant printing presses. The press bed reciprocates on the guides at about 83 times per minute. The continuous cast bronze provides a metal bearing surface free from sand, dirt, dross or any other inclusions. The bronze is supplied in a variety of sections in lengths to 20 feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10592

REALOCK FENCE



GIVES *Positive* PROTECTION

Positive protection for your grounds and property is assured with Realock Fence. In addition, all fittings, hinges and locking devices have bolts on the inside, secure from outside tampering.

Noted for its rugged construction and long-lasting weather resistance, Realock Fence can be depended upon for years of dependable, trouble-free service.

For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION
Denver, Colorado
PACIFIC COAST DIVISION
Oakland, California
WICKWIRE SPENCER STEEL DIVISION
Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN - 10593

We Are SPECIALISTS, Too!

NAGLE designs and builds centrifugal pumps for abusive applications - - -abrasive or corrosive.

The complete line of Nagle vertical and horizontal shaft pumps is engineered to solve tough pumping problems—which Nagle Pumps have done in every industry confronted with such problems. Send for catalog.

NAGLE PUMPS

NAGLE PUMPS, INC.
1241 CENTER AVENUE, CHICAGO HEIGHTS, ILLINOIS

PUMPS FOR ABRASIVE AND CORROSIVE APPLICATIONS

If you write maker identify as IEN - 10594

FOR MATERIAL HANDLING—

more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME · MONEY · LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid CASTER FORKS *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN - 10596

Compare . . . If it's P-K, it's O. K.

PARKER-KALON®

The Original SELF-TAPPING SCREWS

If you write maker identify as IEN - 10597

Widest power range of any powder-actuated fastening tool

MODEL 450 REMINGTON STUD DRIVER

Six different 32 caliber charges meet every fastening requirement

Each of the six power loads for the Remington Stud Driver is designed to give the right power for the job — whether it's driving the stud into concrete or steel.

New, longer heel caps on all six cartridges mean a perfect gas seal . . . assure arrow-straight driving. Bright colors indicate the right load instantly, no chance for error. You can select the *right* cartridge for each job . . . quickly and easily.

But exceptional power range is just one of the Remington Stud Driver's many advantages. This self-powered tool sets up to 5 fastening studs per minute . . . speeds construction jobs and cuts costs. Its light weight—only 5½ pounds—makes handling easy, even in confined places.

Test-proved to be the world's finest and speediest fastening system, the Model 450 Remington Stud Driver is made by the Remington Arms Company, Inc., *America's oldest sporting arms manufacturer.* Send in the coupon below for your free booklet describing the Stud Driver and its many uses.

"If It's Remington—It's Right!"

Remington DU PONT

---MAIL THIS COUPON TODAY----

Industrial Sales Division, Dept. IEN-9
Remington Arms Company, Inc.
939 Barnum Ave., Bridgeport 2, Connecticut

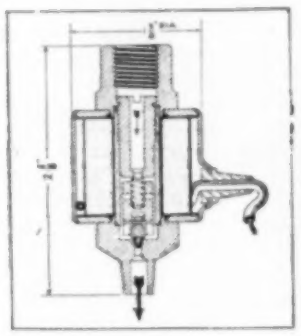
Please send me my *free* copy of the new booklet showing how I can cut my fastening costs.

Name .....
Position .....
Firm .....
Address .....
City ..... *State* .....

If you write maker identify as IEN - 10599

VALVE . . Solenoid operated, pressure to 200 lb., 1/16 in. orifice

Source: SPECIALTY PRODUCTS CO.
3723-27 Monitor Ave., Minneapolis 16, Minn.



Miniature design

Stainless steel, in silver brazed assembly, characterizes the construction of this new 5-oz. solenoid operated valve. There are no gaskets in the construction. The spring backed plunger carries a floating needle valve faced with synthetic rubber. Flow is through the center of the assembly, into the plunger and through side outlets in it to an annular passage surrounding the plunger. The valve assembles in the pipe line carrying the fluid to be controlled. It can operate to 1,000 cycles per minute.

The electric circuit is brought in through a strain relief wire grommet. It seals moisture out of the operating coil. The coil is available for operation on 6, 12, 24-volt dc. or 100-volt ac. Other voltages can be specified on special order.

If you write maker identify as IEN - 10600

BELTS . . Wire hook fastening laces belts to 13/32 in. in thickness

Source: CLIPPER BELT LACER CO.
972-76 Front N. W., Grand Rapids 2, Mich.

Please note our error

We should have stated "about ⅜ in. in thickness", not ¾ in. for the belt thickness that can be laced by the company's new No. 7 hook, described in IEN-8573-53.

If you write maker identify as IEN - 10601

CONTROL . . Voltage regulator for 400 cycle supply, to 100 va. load

Source: AVION INSTRUMENT CORP.
291-48 State Highway 17, Paramus, N. J.

Fuse protected

Model 116-A is a new voltage regulator designed for use in the development of electronic equipment requiring precise regulation of voltage supply. Output is adjustable with regulation to 0.01 per cent, up to one-half the rated load, and to 0.02 per cent at 100 va.

Regulation is maintained with input fluctuation to plus or minus 10 per cent and frequency fluctuation within plus or minus 5 per cent. Recovery time from transients is within 0.01 second. Developed harmonics are within 1 per cent. Overall dimensions are 17 by 7 by 9½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10602

BUSCHMAN CONVEYOR overhead cable costing only $3800.00

SAVES $7000.00 ANNUALLY at Honeywell

Vertical curve of Universal Cable Conveyor inclines to convenient work height, utilizes overhead space.

A BUSCHMAN OVERHEAD CABLE CONVEYOR SYSTEM replaces former manual handling method at MINNEAPOLIS-HONEYWELL REGULATOR CO. with resulting savings of $7,000.00 annually on an investment of $3,800.00. This does not include recovered floor space, reduced aisle traffic, easier working conditions and increased production.

It is anticipated that the overall total savings that will be realized by Minneapolis-Honeywell improved production methods in this instance is approximately $16,000.00 per year.

Why not investigate the possibilities of similar savings in your plant operations?

Write for NEW Bulletin No. 40

THE E. W. BUSCHMAN CO.
4471 Clifton Avenue, Cincinnati 32, Ohio
Representatives in Principal Cities

PRODUCE MORE . . . FOR LESS
Buschman Conveyors

If you write maker identify as IEN - 10603

SPEED LOAD HANDLING for Truck, Shop or Machine

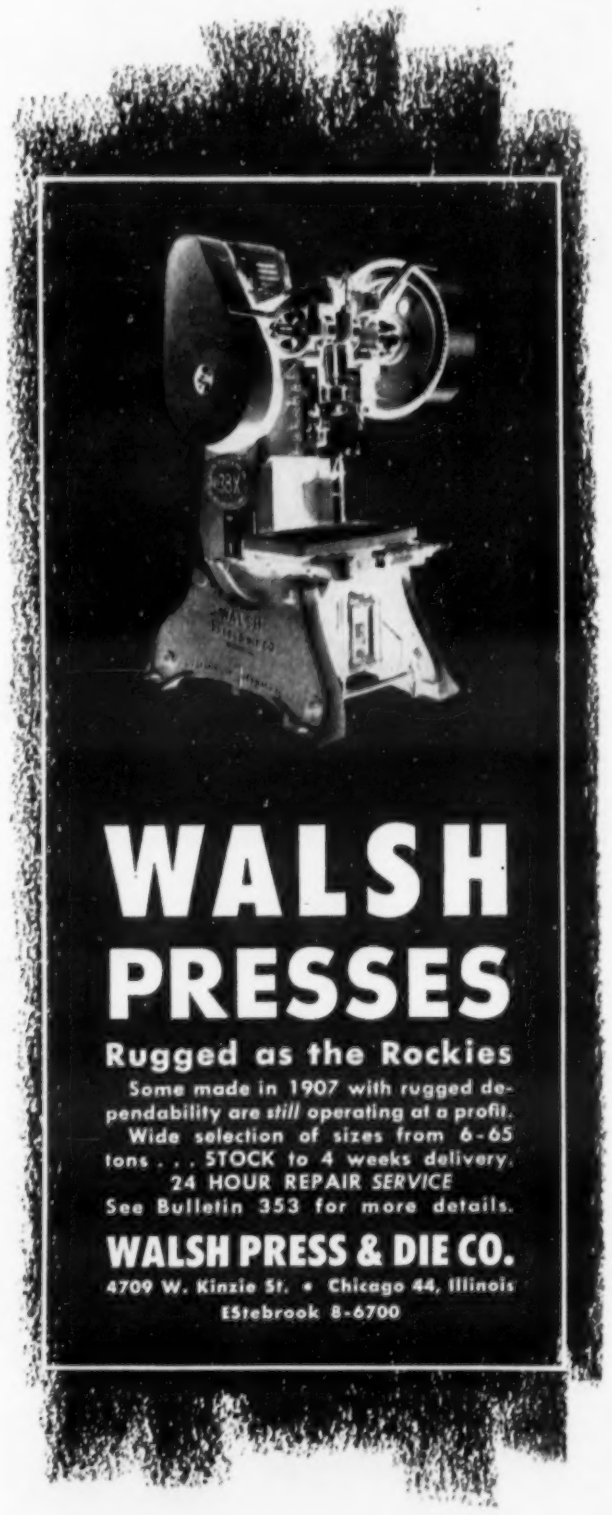
UNIT *utility* HOIST

Hydraulically operated Unit Utility Hoists can speed and ease handling of 1000 to 2000 lb. loads around your trucks, shop or machines, and the hoist itself can be switched from the truck, floor or machine mount in seconds. Three lifting points and boom extension give a wide working range. Hoist swings 360° on truck and locks securely in traveling position. Many uses in every plant.

Write today for latest information

UNIT MFG CO. 1221 Harmon Place Minneapolis 3, Minnesota

If you write maker identify as IEN - 10604



WALSH PRESSES

Rugged as the Rockies

Some made in 1907 with rugged dependability are *still* operating at a profit.
Wide selection of sizes from 6-65 tons . . . STOCK to 4 weeks delivery.
24 HOUR REPAIR *SERVICE*
See Bulletin 353 for more details.

WALSH PRESS & DIE CO.
4709 W. Kinzie St. • Chicago 44, Illinois
EStebrook 8-6700

Division of
AMERICAN GAGE and MACHINE CO.
SIMPSON ELECTRIC COMPANY SIZE CONTROL COMPANY
WALSH PRESS & DIE COMPANY

If you write maker identify as IEN - 10606

THE S.S.White

INDUSTRIAL "AIRBRASIVE" UNIT

The "Airbrasive" process utilizes a controlled stream of high-velocity gas-propelled abrasive particles to perform a wide variety of operations with an amazing speed and precision. It can be used to cut, score, drill, etch or shape extremely hard, brittle materials and to remove deposited surface coatings and films from any base.

It has already been demonstrated that the "Airbrasive" Unit will do jobs that are impossible to accomplish by previously known methods. What's your problem? We'd be glad to arrange a test. Write or phone us today.

For complete information write for Bulletin 5307

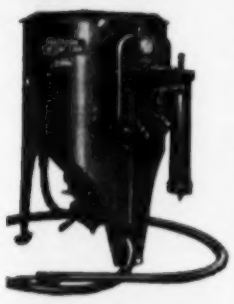
THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO. Dept. NA, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 10607

Here's how Pangborn Solves these Problems with this modern equipment

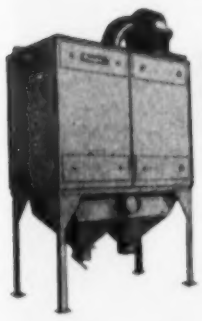
BLAST CLEANING!



Blast Cleaning Cabinet quickly and easily cleans metal parts of rust, grime, dirt, paint, etc. Produces a clean, smooth surface on pieces up to 60" x 36". Models available from **$319.00 and up.**

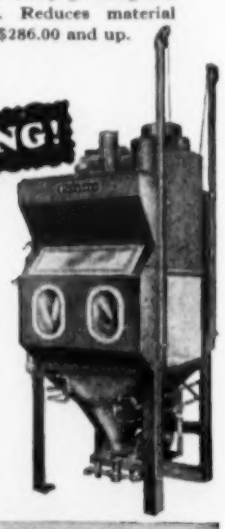
Blast Cleaning Machine not only removes rust, dirt, scale, etc., but is ideal for maintenance and many other uses. Cleans large objects such as bridges, structural work, tanks before painting. Six sizes, portable or stationary, from **$188.00 and up.**

DUST COLLECTING!



Unit Dust Collector stops dust at its source, minimizes machine wear and tear, reduces housekeeping and general maintenance costs. Solves many grinding and polishing nuisances. Reduces material losses. Models from $286.00 and up.

PRECISION FINISHING!



Hydro-Finish Cabinet uses liquid blast, eliminating dust, and reduces costly hand polishing, cleaning and finishing of molds, dies, tools, etc. Removes scale, discoloration and directional grinding lines, prepares surfaces for plating and coating. Holds tolerances to .0001". Models from **$1,410.00 and up.**

LOOK TO PANGBORN FOR THE LATEST DEVELOPMENTS IN BLAST CLEANING AND DUST CONTROL EQUIPMENT

Pangborn

MAIL COUPON for full details

(Check for more information)
- ☐ Blast Cleaning Cabinets
- ☐ Blast Cleaning Machines
- ☐ Unit Dust Collectors
- ☐ Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Gentlemen: Please send me more information on the equipment I've checked at the left.

Name .....
Company .....
Address .....
City ..... Zone .... State .....

If you write maker identify as IEN - 10609

TRANSFORMER . . Variable voltage for control use, stepless adjustment

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.

Bulletin 76 Supplement

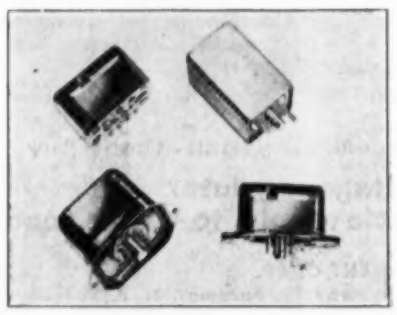
Varistat trade names a new autotransformer to control intensities of low capacity lighting circuits. Rating is 2,000 watts on 110-volt 60-cycle ac. in continuous duty. Operating torque is 30 to 60 inch ounces. Weight is about 15 pounds. The unit is available in single or multiple assemblies, in interlocking types and in remote control motor operated units.

Construction employs a light weight cast alloy base, a toroidal transformer core made of strip wound silicon steel wound with a single layer of insulated wire. The brush track is surfaced with silver. A self-lubricating carbon brush is backed by a coil spring to maintain uniform pressure for all brush positions. Base length, in the position shown, is about 7¼ inches. Width is about 7½ in. and height is 4¾ inches.

If you write maker identify as IEN - 10610

RELAY . . Ultra-sensitive dc., polarized and hermetically sealed

Source: BARBER-COLMAN COMPANY
1312-16 Rock St., Rockford, Ill.



Weighs 10 ounces

Octal plug or solder terminals can be specified for this new dc. relay. It has been developed for use in balance detecting bridge circuits in servo applications and as a plate current relay for electronic circuits. It can be operated directly by a current generating type of photocell. Housing dimensions are 1⅝ by 1⅝ by $2\frac{3}{16}$ inches.

Standard design is for single-pole, double-throw null seeking operation. Form-C and latch-in types are available also. Sensitivity ranges from 50 microwatts to 100 milliwatts for the null seeking design. The relay has been tested in some 2,000,000 operations on a 1-amp. 110-volt 50-cycle resistive contact load.

If you write maker identify as IEN - 10611

Now it is possible to make copies on the Apeco Auto-Stat photocopy machine in various colors. A set of orders or records run in black on white, then in other color combinations so there is no separation problem in routing duplicate copies to given departments. The original equipment was previously described IEN-13687-52, for American Photocopy Equipment Co., 2852 N. Clark St., Chicago 14, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10612

A Rugged High-Speed Loading Dock ...Where and When You Want It!

MAGCOA'S Portable MAGNESIUM YARD RAMP

• One man moves it! • Hydraulic lift positions it! • Material starts to move, fast! You get fuller use of present facilities, lift trucks and operators—less idle time. You cut demurrage charges . . . eliminate additional investment in inflexible, immovable dock facilities.

Magcoa engineering and manufacture converts light-weight magnesium into a rugged, heavy-duty Yard Ramp . . . braced like a bridge . . . for your specific requirements. Capacities to 16,000 lbs. in five basic sizes—or a "special"—delivered with usual Magcoa promptness, thanks to mass production methods.

More than 1000 companies are already looking into how the new Yard Ramp can save them money. Free new literature can help you do the same thing. At the same time learn how light-weight, heavy-duty Magcoa Dockboards can save time and money on stationary docks. Write today.

FACT FILE

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

Dept. 1 for Yard Ramp information
Dept. 2 for Dockboard information

If you write maker identify as IEN - 10613

THREE "CHEATS" IN THE WIND

Don't let Dirt, Dust, and Grit rob your machinery of its efficiency—*cheat* you out of profitable operation. Blast 'em out of every crack and crevice with a powerful CLEMENTS-CADILLAC blower-suction cleaning tool. Cleans all types of equipment . . . quickly, thoroughly, economically.

SAVE TIME • MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6420 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN - 10614

Ten basic sizes with capacities from 30 Mbh to 490 Mbh. Totally enclosed motors.

nyb

UNIT HEATERS

Built to Meet Modern Industrial Requirements

Horizontal Type

Ceiling suspension type with heavy duty, welded steel, fin-and-tube heating element. (Extra heavy non-ferrous coils also available.) Suitable for continuous heating service on steam pressures up to 150 pounds or more.

Bulletin 513

Vertical, Projection Type Also Available

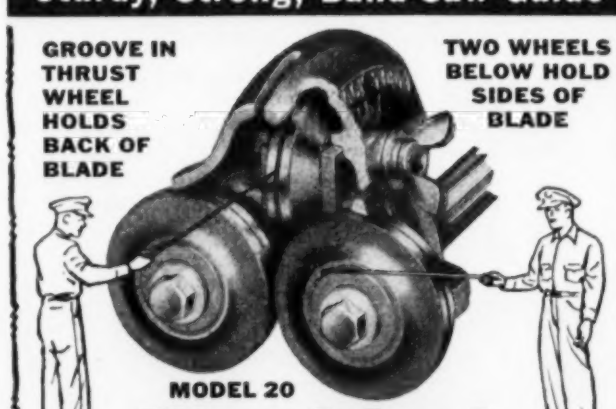
For efficient heating from high-ceiling areas—for door heaters over small openings—or where the horizontal type is not applicable. Ten basic sizes; capacities from 27 to 332 Mbh.

Bulletin 516

IUHA HEAT WITH UNIT HEATERS

nyb THE NEW YORK BLOWER COMPANY
SALES OFFICES • 3181 SOUTH SHIELDS AVENUE • CHICAGO 16
FACTORY, LAPORTE, INDIANA

Sturdy, Strong, Band-Saw Guide



MODEL 20

Paddock BALL-BEARING **BAND SAW GUIDES**

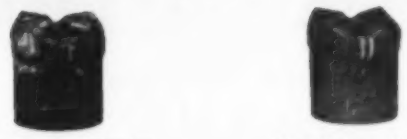
MODEL 20 is designed to fit above or below saw table. Interchangeable ball-bearing wheels turn with blade — Give strong, friction-free support to blade. Cut out section shows V-shape groove that supports back of blade. Lower wheels support sides of blade. Better adjustment to thrust wheel for ⅛" to 1" wide blade. Model 20 can be installed on machines having 2½" back of blade to guide post. Write, giving size and make of machine on which guides will be used.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1921
1418 Walnut St. Kansas City, Missouri

If you write maker identify as IEN - 10616

Pressure Blast Application #622



Before Pressure Blasting — After Pressure Blasting

Conventional chemical strippers failed to remove the heavily encrusted heat treat scale and braze deposits from this part after a 4 hour immersion. Pressure Blasting did the job in 45 seconds with no damage to the carbide inserts . . . no stock removal or loss of braze actually holding the carbide.

MODEL A . . . ONE OF 4 STANDARD UNITS. CUSTOM MACHINES DESIGNED TO FIT SPECIAL REQUIREMENTS.

ONLY PRESSURE BLAST GIVES YOU 2-SPEED WET-BLASTING

FREE . . . Learn what PRESSURE BLAST can do for you! Die and Mold Polishing, Blending Grind Lines, Deburring, Heat Treat Scale Removal, Honing of Cutting Tools, Pre-plating Cleaning . . . Hundreds of proven, money-saving applications! Write for our new 8 page fully illustrated Booklet . . . or send samples of work you want tested to:

the CRO-PLATE Company, Incorporated
747-3 Windsor St.
Hartford 5, Conn.

If you write maker identify as IEN - 10617

no room in your budget for Environmental Testing?

then you haven't seen the Tenney SERVO UNIT and COMPANION TEST CHAMBER

Accurate environmental testing, for a wide variety of controlled atmospheric tests, is within the reach of *all* industrial budgets. The cost is well under $2,000 for the majority of industrial needs.

The Tenney Servo Unit, a portable air-conditioning system, provides broad variations of heat, cold, and/or humidity for aging and weathering test programs. Air is circulated at the rate of 40 cu. ft. per min., capable of absorbing 1700 B. T. U. per hour at − 100°F., or of delivering 5000 B. T. U. heating effect at a maximum temperature of + 180°F. Relative humidity can be maintained from ambient to 95% in a temperature range of ambient to + 180°F. in 40 cu. ft. of recirculated air. Low temperature operation requires 10 lb. of dry ice per hour at − 180°F., ¾ lb. per hour static.

SPECIFICATIONS

Model	Size	Wgt.	Dry Ice Capacity	Total Temp. Range	Electric Req'mts.
TSU-50	17"x17"x31"	165 lb.	50-70 lb.	−100°F. to + 200°F.	2 kw.
TSU-150	21"x25"x33"	200 lb.	150 lb.	−100°F. to + 200°F.	2 kw.

The Tenney Companion Test Chamber provides an efficient test work-space when attached to the Tenney Servo Unit either horizontally or vertically, by a simple, sturdy device. (Servo is easily detached for use with other enclosures or tests.) Ruggedly constructed and fully insulated, this chamber is built in three sizes of work space, stainless-steel lined: 3 cu. ft. (18" x 18" x 18"), 8 cu. ft. (24" x 24" x 24"), and 27 cu. ft. (36" x 36" x 36"). Forged brass hardware is provided. Complete vapor-proofing is achieved by special gaskets. Optional equipment includes multi-paned viewing window in door, electrical connector panel, turning shafts, coaxial cable, utility ports, and high-voltage terminals.

For further information and prices write:

Tenney ENGINEERING, INC.
Dept. C, 26 Avenue B, Newark 5, N. J.
Los Angeles Representative: GEORGE THORSON & CO

SEE US AT R.E.M.A. SHOW NOV. 9-13 BOOTH 219

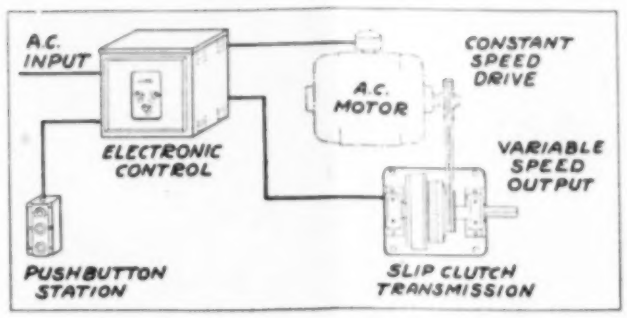
Engineers and Manufacturers of Automatic Environmental Test Equipment

8584

If you write maker identify as IEN - 10619

DRIVE . . Magnetic clutch for variable speed and torque control

Source: JUNE & COMPANY
505-A New Center Bldg., Detroit 2, Mich.



Illustrated technical data in Bulletin 53-A

Capacities range from 3 to 20 hp. in the various combinations in which the company's new Hysteresis type magnetic clutch is available. A typical application is shown in the illustration in which the clutch is belt connected to an ac. motor to provide a variable speed transmission. It also can be built into an ac. motor structure to make a self-contained assembly.

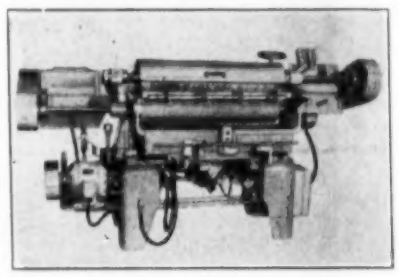
By controlling the excitation current any degree of slippage can be established to provide full torque capacity within the speed range. Heat generated within the clutch at any rating is dissipated by its own internal fan assembly so there is no danger of over-heating under the most severe operating conditions. Preset speeds can be accurately maintained, independent of load variation, through normal speed ranges.

The company is prepared to provide engineering assistance in application of the clutch and its associated equipment for specific purposes. Technical data is available upon request.

If you write maker identify as IEN - 10620

POLISHING . . Roll type machine to finish cutlery and hand tools

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



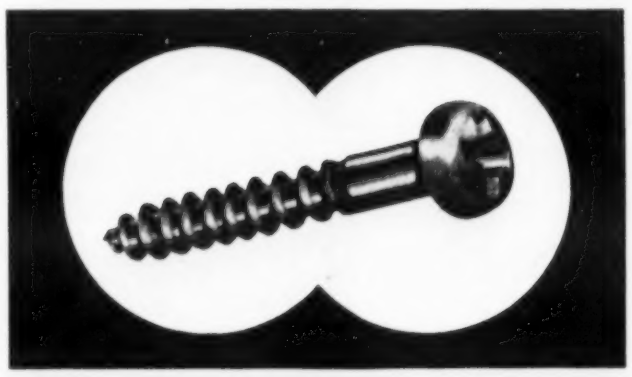
Sealed bearings

Model 202-A is a new machine in the company's line of finishing equipment, previously described IEN-1648-53. It can be set to remove flash only, or for a fine mirror work finish. It employs an electrically operated hydraulic feed that is operative in both directions between the horizontal rolls. The rolls are backed by compressed air for float action and to open for loading and unloading. A bar is provided as a safety device to cause immediate roll opening if it is contacted.

The rolls are 40 in. in width and range from 4 to 9 in. in diameter. They can be replaced in about two minutes. The machine is available with automatic cycling controls, direct or V-belt drive, automatic spray application for liquid abrasives, preloaders and work holders similar to those previously described IEN-7650-53. Maximum coverage is 14 or 24 in. in two machine widths.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10621



looking for hot dip galvanized wood screws?

Phillips or Slotted?
Flat, round, or oval?
In widest range of sizes?

They're in stock at Southern! All made to Federal Specifications FF-S111a.

Also in brass, bronze, aluminum and all popular plated finishes.
SHIPMENT FROM STOCK!

For easier driving—
Wood Screws in bulk lubricated free on request.
For information or free catalogue, write Box 68-E.

SOUTHERN SCREW COMPANY
STATESVILLE • NORTH CAROLINA
MANUFACTURER OF WOOD SCREWS
Factory Warehouses: North Bergen, N. J. • Chicago 10, Ill. • Los Angeles 23, Calif.

If you write maker identify as IEN - 10622

ENGRAVE

PANELS OF ANY DIMENSIONS IN YOUR OWN SHOP with the Engravo-graph

The only portable machine which reproduces 15 sizes from one master alphabet.

The only one with adjustable copy holding slides for multi-line engraving in one set-up.

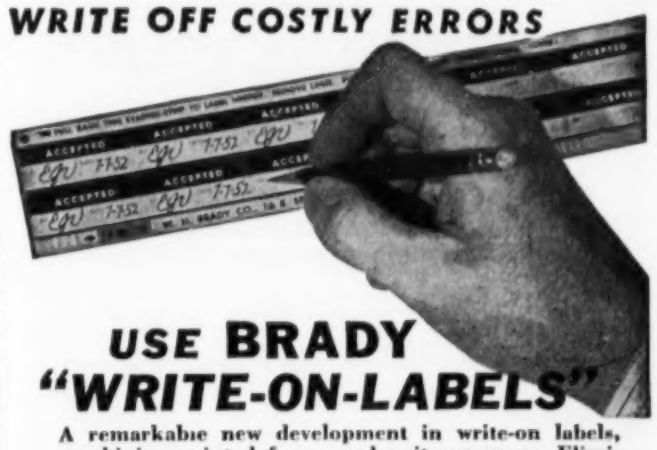
Self-centering holding vise for nameplates.

Send for Booklets
I-S-23 portable model • H-23 heavy duty model

NEW HERMES, Inc. 13-19 University Place, N.Y. 3
In Canada: 359 St. James St., Montreal
World's Largest Manufacturer of Portable Engraving Machines

If you write maker identify as IEN - 10623

WRITE OFF COSTLY ERRORS



USE BRADY "WRITE-ON-LABELS"

A remarkable new development in write-on labels, combining printed forms and write-on space. Eliminate errors, simplify quality control, speed production through the use of these Brady self-sticking, Write-on Labels, made to your requirements. They're mounted on handy dispenser cards which serve as writing boards; easily written on with pencil, pen, rubber stamp or even typewriter, and then applied to any surface. Hundreds of money-saving uses, including inspection, identifying circuits and instruments otherwise hard-to-mark.

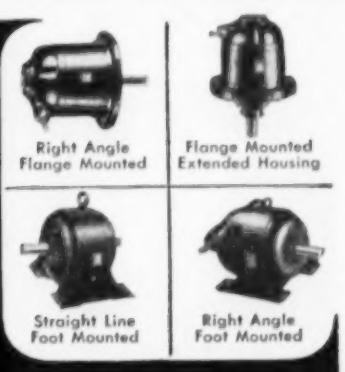
Made of self-adhesive, sturdy cloth backing, pre-cut to exact size, shape, color and printing desired. Send for samples and complete information on stock and special labels.

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MARKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS
W.H. BRADY COMPANY
159 W. GLENDALE AVE., MILWAUKEE, WIS.

If you write maker identify as IEN - 10624

FOOTE BROS. SLOW SPEED LINE-O-POWER DRIVES



Equipped with DUTI-RATED LIFETIME GEARING

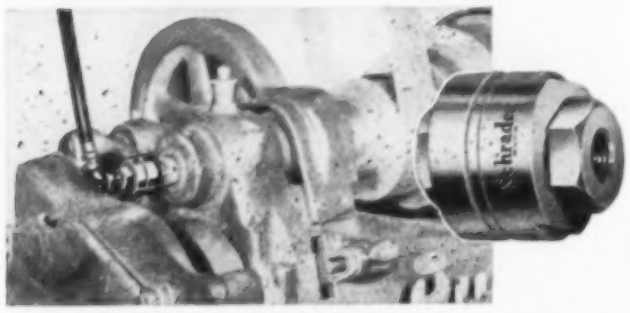
- For Horizontal or Vertical Applications
- In Straight Line *and* Right Angle Design
- Both Foot *and* Flange Mounted Units
- Rugged—Compact—Economical
- Ratios, Capacities for Heavy-Duty Use

This Trademark Stands for the Finest in Industrial Gearing

Foote Bros. Gear and Machine Corp.
Dept. IEN, 4545 S. Western Blvd.
Chicago 9, Illinois
Please send Line-O-Power Bulletins:
☐ Straight Line ☐ Right Angle
Name
Address
City State

If you write maker identify as IEN - 10625

TRANSMITS AIR PRESSURE THROUGH ROTATING PARTS



Where it is necessary to transmit line pressure or partial vacuum from a rotating member to a fixed unit, you will find **Schrader Rotating Pressure Joints** the answer. These compact, air-tight units handle a variety of gases, liquids, as well as compressed air. Free rotating action on one side is possible while the line connections on the other side are in a fixed position. Ball bearing construction assures a minimum of rotating friction. They measure 2½" in overall length. Available with ¼" and ⅜" N.P.T. threads.

Write today for your copy of the Schrader catalog, which contains full description.

A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated

458 Vanderbilt Avenue, Dept. D-32, Brooklyn 38, N. Y.

If you write maker identify as IEN - 10626

LIFTS DIRT FROM FLOORS... HOLDS IT OFF...

CINDET

100% ACTIVE 100% SAFE!

NEW LIQUID SYNTHETIC DETERGENT

Whether your water supply is HARD or SOFT, cleaning with CINDET means *no curds, no dingy film!* CINDET is *surface-active*—it works on the principle of LIFTING floor dirt, grease and old water-emulsion wax from floors and HOLDING it in suspension in a fluffy mass of energetically-cleaning SUDS. *Dirt is not re-deposited*—rinses off easily.

Dilute a little CINDET in HARD or SOFT water . . . apply with clean mop . . . let foamy, clean-looking suds stand 5 or 10 minutes . . . scrub only if necessary, and rinse thoroughly. The result: AMAZINGLY BRIGHT, CLEAN FLOORING.

Safe for *all* flooring — and wonderful for removing stubborn rubber marks. Also excellent for walls, for shampooing rugs and upholstery, for washing dishes by hand.

DOLGE backs up CINDET with a complete-satisfaction-or-deal-is-off GUARANTEE! Write for literature; have your DOLGE SERVICE MAN demonstrate CINDET *on your dirtiest, greasiest flooring.*

THE SUDS DO THE WORK!

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

expendable DOLGE

WESTPORT, CONNECTICUT

If you write maker identify as IEN - 10627

Increase Your profits by knowing more about your costs

THE *Simplex* COST RECORDER

gives you 100% accounting of your employees' Time

STOPS TIME LEAKS

PRODUCES INDISPUTABLE RECORDS

REDUCES NON-PRODUCTIVE TIME

Your records show exact starting and ending time for each job... accurate printed records made by the employee, quickly, easily, without loss of time. Simplex Cost Recorders are fully automatic, and give you fast, accurate time computation for payroll make-up, as well as cost accounting.

SIMPLEX TIME RECORDER CO., Gardner, Mass., Dept. I-9

Please give us more information on:

☐ Cost Recorder ☐ Time Cards ☐ Electric Time Stamp
☐ Watchman's Clock ☐ Time Card Files ☐ Time Card Racks

Firm .....

Name .....

Street & No. .....

City ..... State .....

If you write maker identify as IEN - 10628

MIXING . . Laboratory machine takes dry material jars to one quart

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.

Quick and thorough

Rotating arms, driven at 57 rpm. by a motor in the main housing of this new Fisher-Kendall mixer, terminate in "finger equipped hands." The fingers are fitted with suction cups and are adjustable on the hands to clamp a quart size, or smaller container, in angular position with reference to the axis of the arm.

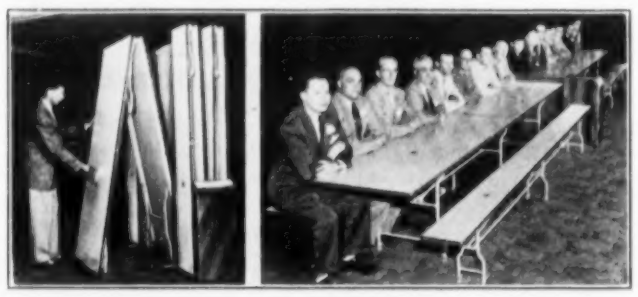
Two containers can be handled at one time or one can be employed on one side of the machine only. When the arms rotate the material enclosed in the container is slid, thrown back and forth along the container length and also is thrown up and down as the container revolves.

The drive is designed to stall if an operator's hands come accidentally in contact with a container while it is being rotated. The machine is mounted on suction cup rubber feet. They absorb vibration and prevent creep.

If you write maker identify as IEN - 10629

FURNITURE . . Tables and benches open to use, fold and roll to storage

Source: SCHIEBER SALES CO.
12953-57 Inkster Road, Detroit 23, Mich.



Room for thirty-two individuals

Mobil-Fold is a new assembly of two 14-ft. tables and four benches of the same length with a caster equipped truck into which both the tables and the benches fold upright. The truck remains in the center or can be unlocked and rolled away.

Construction includes welded tubular structures with ¾-in. mahogany plywood tops carrying heat resistant plastic surfaces and formed steel reinforcements.

If you write maker identify as IEN - 10630

New department has been opened at Norton Company, 36 New Bond St., Worcester 6, Mass., to handle job lapping work. The installed equipment will take flat work to 24 in. across, cylindrical work from $\frac{1}{16}$ by ½ in., to 2 by 8 inches. Any material that can be lapped will be accepted for the operation. The department is supervised by expert lapping engineers who have pioneered the process and developed the equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10631

REDUCE COSTS ON "SMALL-WORK" GRINDING & FINISHING JOBS with

Foredom FLEXIBLE SHAFT MACHINES

- FEATHER-WEIGHT finger-tip-controlled handpiece (pencil size or larger) which eliminates operator fatigue.
- CHOICE OF 5 HANDPIECE TYPES (all instantly interchangeable). You fit the handpiece to the job at hand.
- EXTRA GOOD FLEXING QUALITIES in the flexible shaft assembly for effortless maneuverability.
- LONGER MOTOR LIFE because motor is not dwarfed to fit the hand.
- HIGH SPEED (14,000 RPM) which does not drop precipitately under load.
- SILENCER-EQUIPPED flexible shaft for vibration-free performance.
- BENCH OR HANG UP MODELS FOR HEAVY OR LIGHT DUTY

Over 100,000 FOREDOMS now in use!

Also flexible shaft tools attachable to your own drill press or motor

Use Foredoms to GRIND, POLISH, DRILL, ROUT, CARVE, MILL, SAW, SLOT, CLEAN, SAND, ETCH, ENGRAVE, etc., etc.

Write for Catalog 4165

FOREDOM Electric Co., Dept. 4165, 27 Park Place, N. Y. 7

If you write maker identify as IEN - 10632

Low Temperature Melting

CERRO ALLOYS

can save you

Time • Labor • Money

. . . If you—

- ☐ make stamping dies
- ☐ locate bearings, non-moving parts in machinery
- ☐ make chuck-jaws
- ☐ make molds for plastics
- ☐ proof cast forging molds, dies, etc.
- ☐ bend metal molding and tubing

For details, check items desired, clip ad to your letterhead and mail to:—

CERRO DE PASCO CORPORATION

Dept. 6, 40 Wall St., New York 5, N. Y.

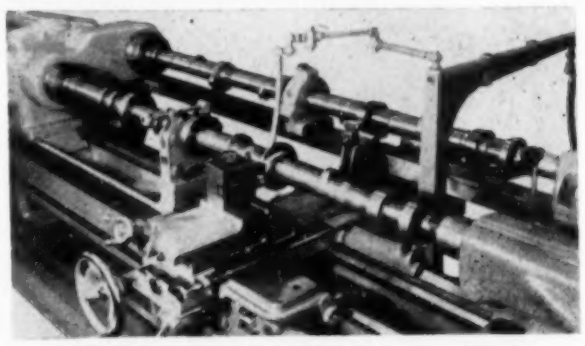
If you write maker identify as IEN - 10633

Turchan

has what industry needs in the trend to

Automation

with TRACER-CONTROLLED machine tools



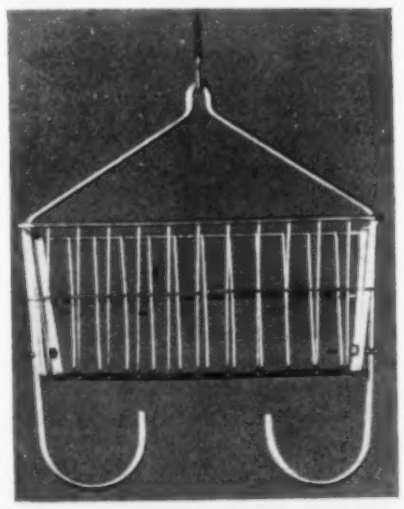
- Standard or special machine tools go automatic
- Produce more work, faster, at repetitive accuracy
- Simplify difficult jobs, reduce set-up time
- Eliminate rejects, force down production costs

Write Us for Information

TURCHAN FOLLOWER MACHINE CO.

8259 LIVERNOIS AVENUE • DETROIT 4, MICHIGAN

If you write maker identify as IEN - 10634



GALVANIZED ELECTRO-WELDED WIRE

14" SQUARE 7" DEEP

1200 CU. INCHES STORAGE SPACE

BASKET SLIDES ON HANGER FRAME, LOCKS CLOTHING ON HOOKS

THE MOORE LOCKERBASKET

FOR OVERHEAD CLOTHING STORAGE

No lockers to take up valuable floor space when you install Moore Lockerbaskets in your plant changeroom. More efficient use of space, more light, better ventilation. Shoes, hat, and personal articles fit in basket, clothes are suspended on hooks. Baskets lowered, raised, and locked by chain.

Write for descriptive folder and free book, "The Design and Layout of Industrial Change Rooms." *Address Department 93.*

THE MOORE COMPANY

1036 QUARRIER STREET, CHARLESTON, W. VA.

If you write maker identify as IEN - 10635

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS

USE "RING SEAT" CENTER DRILLS

IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple, quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES
13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as IEN - 10636

Lepel's 3 new LOW COST • PORTABLE HIGH FREQUENCY Induction HEATING UNITS

Ideal for....

- Production Heating of small parts
- Educational Institutions
- Research Laboratories
- Machine Shops
- Tool Rooms

HARDENING
MELTING • BRAZING
ANNEALING • SOLDERING

The Lepel line of induction heating units represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for industrial heating. With a background of half a century of pioneering electrical and metallurgical experience, the name Lepel has become the symbol of induction heating equipment embodying the highest standards of engineering achievement, dependable low cost operation and safety.

Amazing in its speed, Lepel equipment reduces the time required for hardening, annealing, stress relieving, brazing, soldering and melting from minutes to seconds. It performs these operations with a degree of precision and uniformity rarely attained through other processes.

LEPEL Electronic Tube GENERATORS available from 1 kw. to 100 kw.
LEPEL Spark Gap CONVERTERS available from 2 kw. to 30 kw.

WRITE FOR THE NEW LEPEL CATALOG . . . 36 illustrated pages packed with valuable information on high frequency induction heating.

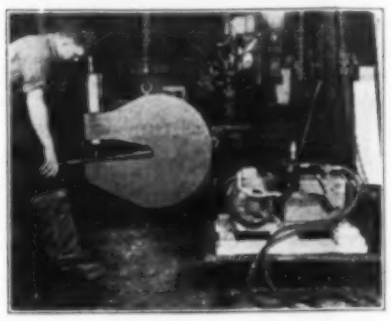
All Lepel equipment is certified to comply with the requirements of the FCC.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

If you write maker identify as IEN - 10638

PUNCHING . . Hydraulic tool rates 1 in. hole in ¾ in. mild steel

Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.



Model P-75-352-E

The company has added a new power operated hydraulic punch to its line of portable punching and shearing equipment. The new unit includes a C-frame punch, weighing 1,650 lb., to mount in a suitable supporting stand or to suspend from overhead. The power cylinder, mounted on the frame, connects by hose to a portable motor driven hydraulic power unit to provide 75-ton thrust. Punch diameter range is ¾ to 1¾ inches. An operating cycle requires 3 seconds. The pump is driven by a 2-hp. electric motor. Control is a foot operated valve.

If you write maker identify as IEN - 10639

EXTINGUISHING . . Quart hand unit delivers stream of vaporizing liquid

Source: AMERICAN-LAFRANCE-FOAMITE CORP.
137 E. LaFrance St., Elmira, N. Y.

Technical data upon request

Model PCB-1 is a new hand extinguisher that takes a quart charge of bromochloromethane and a pressure charge of air at 150 to 175 pounds. At the top of the cylindrical housing is a pressure gage, nozzle and trigger operated valve with which the unit can be aimed and discharged at a Class-B or C fire. The extinguisher applies on flammable liquid and electrical fires. It will not freeze at temperatures to minus 65 deg. F.

If you write maker identify as IEN - 10640

TRUCK . . Crane attachment arm carries magnet rating a 3 ton load

YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

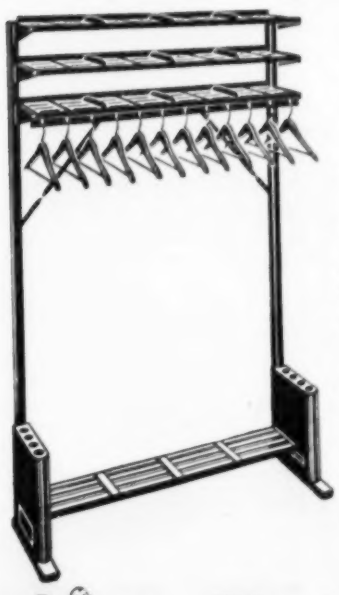
Scrap Grabber

Special assembly of one of the company's fork lift trucks is equipped with a crane attachment arm and an electro-magnet to handle cast iron or steel borings and turnings. The truck mounts a 36-volt Model Z-36 Ready-Power engine generator unit that supplies current for the magnet. The truck controls provide for raising the load and energizing the magnet at the operator's position in the protecting cab. The magnet can be hung at four positions on the boom ranging in capacity from 4,700 lb. at 36-in. reach to 3,000 lb. at 72 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10641

VALET RACKS



END ALL "WRAPS" PROBLEMS

Reduce Absenteeism

— keep employees' wraps dry, aired, and in press

With Office valet wardrobe equipment employees do not face weather in damp clothing that has been crumpled in lockers, do not eat soggy lunches soaked by wet hats or mittens. The 4-foot 3-U rack, illustrated, accommodates 12 employees with spaced coat hangers, individual hat spaces, umbrella racks and overshoes shelf. Other units with or without lock boxes, in sizes or capacities for every office, store, warehouse, factory or institutional need.

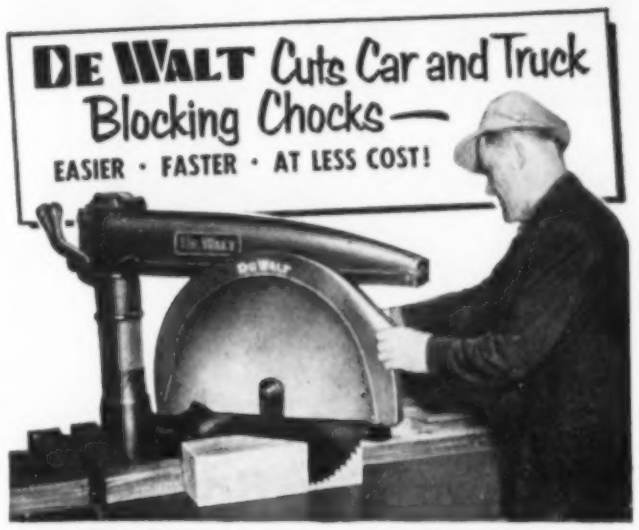
Write for Bulletin OV 5

VOGEL-PETERSON CO.
1121 West 37th St. • Chicago 9, Ill.

If you write maker identify as IEN - 10642

DE WALT Cuts Car and Truck Blocking Chocks—

EASIER • FASTER • AT LESS COST!



De Walt® brings unbelievable ease, speed and economy to your blocking operations!

One lumber yard owns a 7½ H.P. De Walt that cuts 6" x 6" car blocking chocks for 8 hours a day!

It makes 1,000 such cuts before it needs sharpening! A band saw blade needs sharpening after only 200 cuts.

Investigate De Walt—the profitable answer to your blocking problems... as well as *all* your wood cutting problems. Send for catalog to De Walt Inc., Dept. IEN-9, Lancaster, Pa.

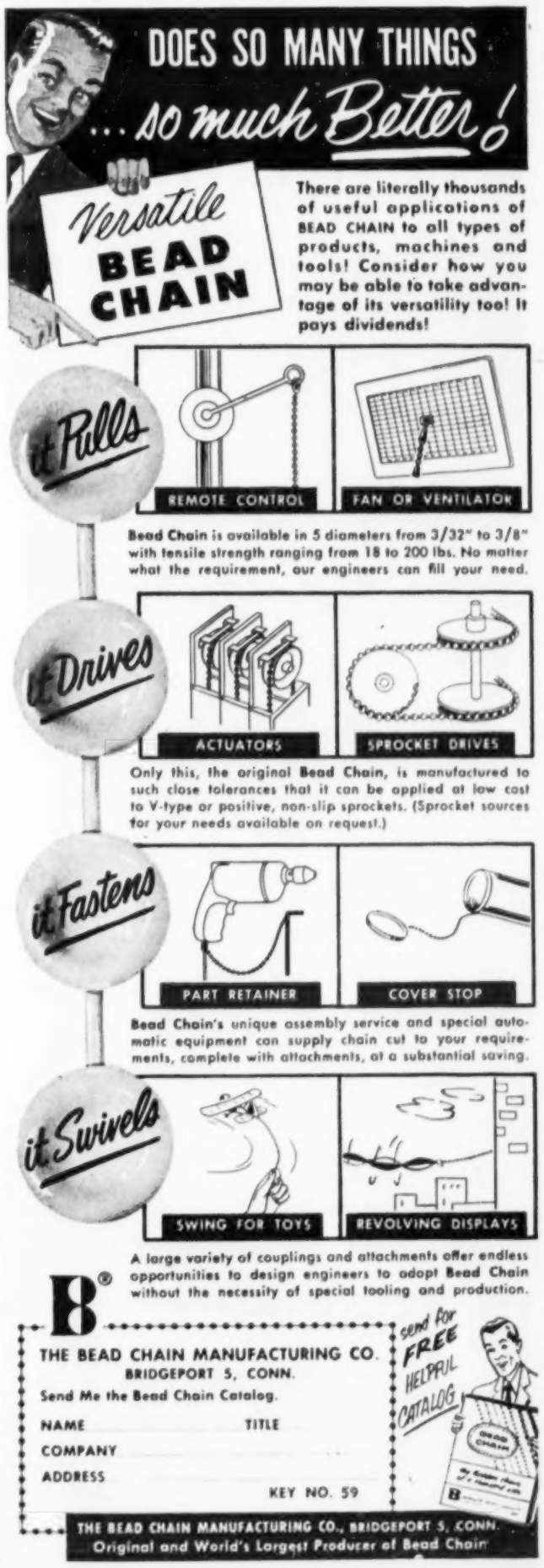
De Walt Inc. Lancaster, Pa.

DE WALT
POWER SAWS

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 10643

DOES SO MANY THINGS ... so much Better!



There are literally thousands of useful applications of BEAD CHAIN to all types of products, machines and tools! Consider how you may be able to take advantage of its versatility too! It pays dividends!

Bead Chain is available in 5 diameters from 3/32" to 3/8" with tensile strength ranging from 18 to 200 lbs. No matter what the requirement, our engineers can fill your need.

Only this, the original Bead Chain, is manufactured to such close tolerances that it can be applied at low cost to V-type or positive, non-slip sprockets. (Sprocket sources for your needs available on request.)

Bead Chain's unique assembly service and special automatic equipment can supply chain cut to your requirements, complete with attachments, at a substantial saving.

A large variety of couplings and attachments offer endless opportunities to design engineers to adopt Bead Chain without the necessity of special tooling and production.

B®

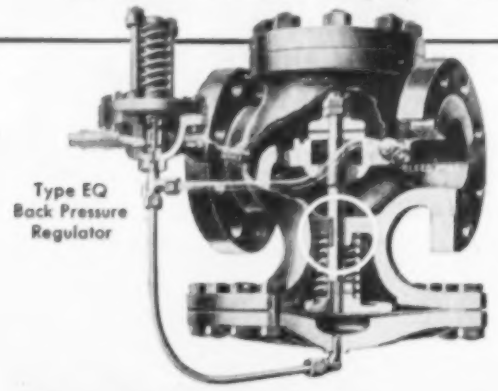
THE BEAD CHAIN MANUFACTURING CO.
BRIDGEPORT 5, CONN.
Send Me the Bead Chain Catalog.
NAME TITLE
COMPANY
ADDRESS
KEY NO. 59

send for FREE HELPFUL CATALOG

THE BEAD CHAIN MANUFACTURING CO., BRIDGEPORT 5, CONN.
Original and World's Largest Producer of Bead Chain

If you write maker identify as IEN - 10645

another SPENCE *design feature*



No Stuffing Boxes..

In Spence regulators all main valves and most pilots are built without stuffing boxes. This packless construction is made possible by the use of a large balanced metal diaphragm which eliminates the need for closely fitted parts. Result? More accurate regulation. • Valve stem wear is also reduced in the Spence packless design. Result? Low maintenance, years of trouble-free service • Write for Bulletin 500 giving full details of complete Spence line of automatic regulating valves.

SE-125

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 10646

Uncle Sam gets MORE than his money's worth . . . with

MASTIPAVE

PABCO's *super-tough, non-slip, resilient, low-cost*

FLOOR COVERING

Why has Uncle Sam, like private industry, purchased millions of yards of Pabco MASTIPAVE? Because Army and Navy installations, barracks, offices, hospitals, warehouses, require floor covering that can take the grueling kick, scrape and scruff of day-in, day-out destructive use. MASTIPAVE will prove to you in *dollar savings* why it is America's Number One low-cost, long-life floor covering. In rolls and tiles. Terra Cotta and Black. For full information on MASTIPAVE...

FILL OUT THIS COUPON

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. B nearest office)

GENTLEMEN: Without cost or obligation to me, please send your folder, "Every Building needs Pabco MASTIPAVE."

NAME _____

ADDRESS _____

CITY _____ STATE _____

If you write maker identify as IEN - 10648

MARKING . . Electric etcher, transformer type with plug-in leads

Source: MARTINDALE ELECTRIC CO.
1353 Hird Ave., Cleveland 7, Ohio

For production use

Six heats, obtained by plugging into receptacles in the face of this new etcher, range from 180 to 1,375 watts. The receptacles are taken from taps on the secondary side of the transformer. Input operation is on 110 or 220-volt ac. A pilot light on the housing face indicates when the circuit is closed. An "on-off" switch is included. The etcher is suited for use on small parts at low heat and on large work pieces, such as cars, shovels, castings, on the high heat connections. A hinged cover encloses and protects the unit when it is not in use.

If you write maker identify as IEN - 10649

BEARING . . Double row roller unit self-aligning for aircraft application

Source: SHAFER BEARING DIVISION
803 Burlington Ave., Downers Grove, Ill.

To order

Illustrated is a representative assembly of a new Torque Tube bearing. It is made to order to meet specific size and load conditions required in aircraft service. The company is tooled for sizes ranging from 1 to 5⅞ in. in bore diameter with load capacity ranging from 1,990 to 87,500 pounds. The bearing provides free rotation under misalignment resulting from mounting inaccuracy and the usual flexing of air frame structural members. **The bearing** is factory lubricated and equipped with positive seals that retain the lubricant and prevent passage of air. Cross section dimensions have been minimized. A groove in the outer race provides for relubrication after a period of service.

If you write maker identify as IEN - 10650

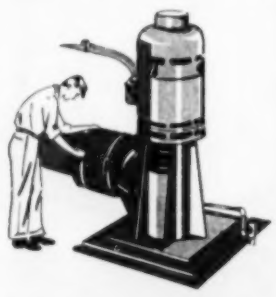
Suspend a fork truck upside down beneath a turntable mounted under a traveling crane and you have a material handling unit known as the Stak-Rak. It travels along narrow aisles. It lifts, lowers, turns and moves from side to side to place loads in shelves and take them out again. Manufacturer is Chicago Tramrail Corp., 4002 W. Washington Blvd., Chicago 24, Ill. Bulletin SR-101 pictures and describes typical applications both standard and special.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10651

When TEFLON* *Meets* "FOLDED-and-FORMED" HEATING ELEMENTS

one result is the manufacture of gaskets and packings that are unaffected by caustics, solvents, acids, chemicals or other liquids. If the packings or gaskets you are using were made from or impregnated with Teflon (*DuPont Company Trademark), chances are this new plastic was processed in equipment heated with "Folded-and-Formed" Elements . . . unequalled for efficiency, economy, adaptability . . . in Standard or Custombuilt Racks grouped to provide any required K. W. *What is YOUR heating problem?*



Meet us at the Chemical Show—BOOTH 803

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA 27 PA

If you write maker identify as IEN - 10652

IF YOU NEED MAXIMUM EXHAUST CAPACITY

THE BURT F.E.F. POWER VENTILATOR CAN SUPPLY IT

The advanced design of the Burt F.E.F. (Free Exhaust Fan) Ventilator provides new higher capacities for rapid localized removal of smoke, fumes, dust and heat. Its absolute free opening exhausts an unrestricted column of air vertically upward at high velocity. Its Burt airfoil design fan provides a high volume of air delivery with efficiency and economy. Capacities from 5,000 C.F.M. to 75,500 C.F.M. See Sweet's for complete data or write for Bulletin SPV-18.

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 So. High St. Akron 11, Ohio

If you write maker identify as IEN - 10653

Grafo Lubricating Compounds

SINCE 1934

Only good products can be advertised continuously

1934 . . Hydrograf a colloidal graphite water concentrate diluted for parting compounds, for die and mold lubricants, for impregnation.

1937 . . Grafo Grease Concentrate for compounding greases and waxes.

1939 . . Assembly compound to condition bearings on initial running in.

1942 . . Shellgraf for use on dies and mandrels in shell forging operations.

1945 . . Diegraf for forging, drawing, stamping dies and molds.

1946 . . Kilngraf a ready-for-use graphited oil for kiln cars, oven chains and similar extreme heat applications.

1948 . . Grafolux a water compound for applications where the finest colloids are not needed.

1951 . . Grafo 5 NC to spray on the surface of forging dies.

1953 . . Colloidal graphite compounds for dependable lubrication and protection, performance proved over the years. Tell us about your tough lubrication problems and let us solve them.

GRAFO COLLOIDS CORPORATION

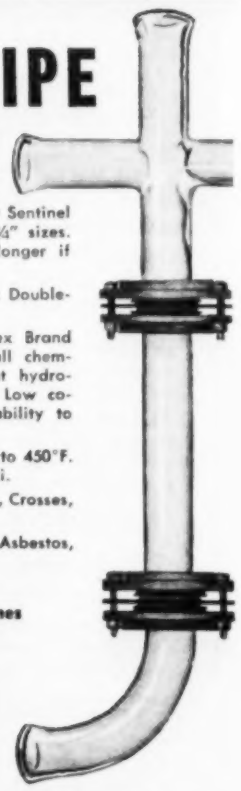
MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

299 WILKES PL.
SHARON, PENNSYLVANIA

If you write maker identify as IEN - 10654

SENTINEL

SMALL DIAMETER GLASS PIPE and FITTINGS



STOCK SIZES AND LENGTHS: Small Diameter Sentinel Glass Flanged Pipe in ¼", ⅜", ½", and ¾" sizes. Straight lengths to 72"; can be supplied longer if required.

Sizes larger than ¾", in Bulletin EA3—Pyrex Double-Tough Glass Pipe and Fittings.

Pipe and Fittings are fabricated from Pyrex Brand Glass Tubing. Corrosion-resistant against all chemicals and combinations of chemicals except hydrofluoric acid and hot concentrated alkalies. Low coefficient of expansion, gives remarkable ability to withstand thermal shock.

Normal operating temperatures up to 250°F. to 450°F. if precautions are taken. Pressures to 100 psi.

FITTINGS: 45° and 90° Elbows, Tees, U-Bends, Crosses, etc. Special Fittings to your specifications.

GASKETS: Teflon Envelopes, Teflon Snap-On, Asbestos, Gum Rubber, Neoprene, Koroseal.

NEW—PYREX GLASS TRAPS in all sizes, for drain and waste lines

SENTINEL GLASS CO.
HATBORO, PENNA.

Send for Bulletin SG 11 and name of nearest distributor

If you write maker identify as IEN - 10655

PROTECTS YOUR RAILROAD SIDING OR TRUCK LOADING DOCKS

Men and merchandise remain dry . . . damage is prevented.

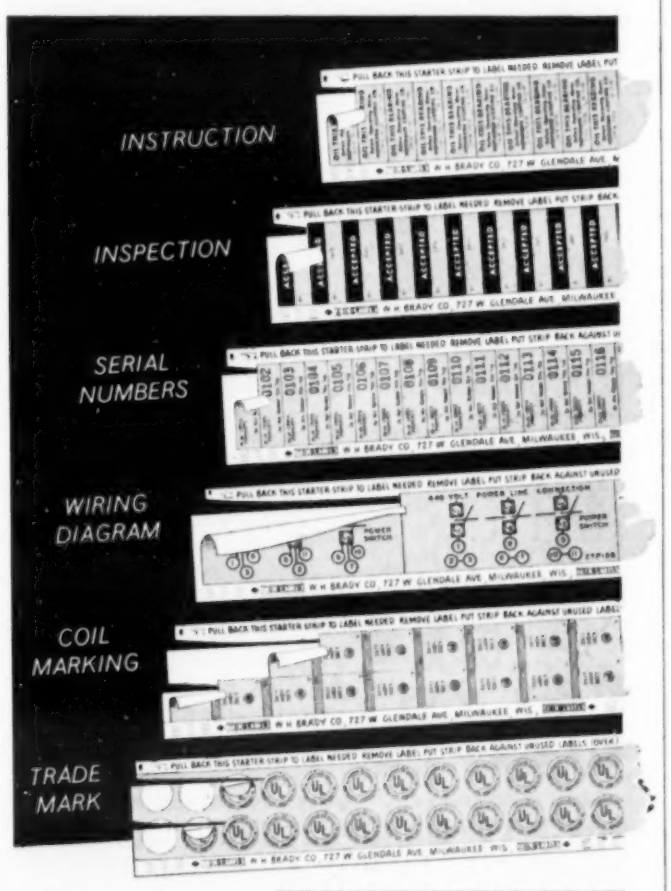
A simple, inexpensive way to make your loading dock useful the year around. Mamaux Dry Dock Cover folds flat when not in use. Made of heavy flame and water-resistant canvas, sturdy frames and hardware. Cover roof slopes for rain run-off; canopy extends inside car or truck—keeps walkway dry.

Three scissors arms on each side offer rigid support. No bottom bar to impede truck tailgate.

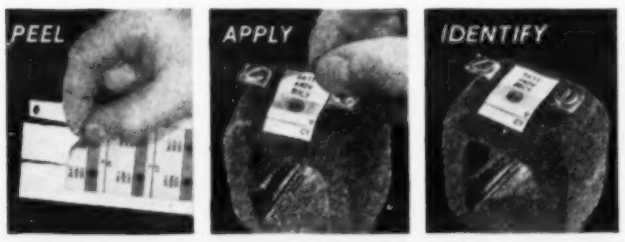
Write or phone for full details
Each cover is custom made to fit your loading dock

A. MAMAUX & SON
120 Blvd. of Allies • Pittsburgh 22, Pa.
Phone COurt 1-3500

If you write maker identify as IEN - 10656



Self-sticking **BRADY-LABELS**
in whatever shapes, colors, sizes, quantities YOU need!



Special BRADY QUIK-LABELS fill the bill, no matter what your labeling requirements. Your choice of cotton cloth or acetate cloth, glass fibre, paper, cellophane, plastic or acetate fibre label materials printed in any wording, any colors, to your specifications. Pre-cut to exact size, they come mounted on handy Dispenser Cards ready for use. Brady Self-Sticking Labels are instantly released from Cards by exclusive *zipper-action* Starter Strip. We've successfully solved tough identification problems for hundreds of manufacturers. What's yours? Chances are we have the answer Write today for FREE SAMPLES and useful literature.

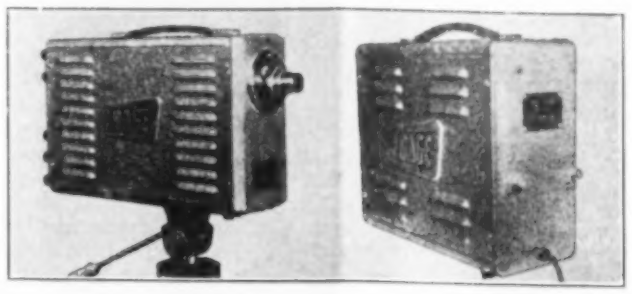
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · AISLE MARKERS · MASKS & STENCILS · PRINTED ROLL TAPES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
765 W. GLENDALE AVE. • MILWAUKEE 12, WIS.

If you write maker identify as IEN - 10658

SIGNALING . . Television equipment reproduces observed remote conditions

Source: DAGE ELECTRONICS CORP.
N. 67th & Meadows, Beech Grove, Ind.



Brings the plant into the control room

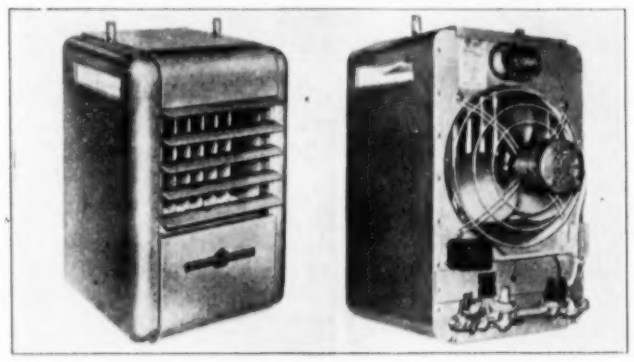
Camera Model 100-B and Audio-Video Mixer Model 200-A are new equipment in the company's line of industrial closed circuit television equipment. The camera represents new development of the Model 100-A, previously described IEN-12195-52. Picture quality is improved and the equipment is able to withstand severe temperature variations. A new optical output can be used to feed a video monitor for applications where a standard television receiver is not suited.

The Mixer provides for transmission of audio signals over the same coaxial cable as the picture. It permits placing a microphone beside the camera to simultaneously pick up the sounds of operations or instructions. Both the camera and the mixer can be tuned to any channel between No. 2 and No. 6 to permit the use of standard television receivers. Sending and receiving equipment can be located to 1,000 ft. apart, or more under favorable conditions at the ends of the inexpensive coaxial cable. An antenna booster can be used for longer distances between camera and receiver.

If you write maker identify as IEN - 10659

HEATING . . Gas fired space unit, seven sizes to 160,000 btu. per hour

Source: AMERICAN AIR FILTER CO.
123 Central Ave., Louisville 8, Ky.



Technical data in Bulletin 715

Seven new sizes have been added to the Herman Nelson line of steam and hot water unit heaters. The new units employ burners for use with natural, manufactured or liquefied petroleum gas. Heat output ranges from 20,000 to 160,000 btu. per hour. Fan diameters are 12 to 20 inches. Finish is in gray-green baked enamel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10660

91-24 VAN WYCK EXPRESSWAY • JAMAICA 35, N. Y.

If you write maker identify as IEN - 10661

If you write maker identify as IEN - 10662

Simple operation beats five o'clock deadline

At the Symington-Gould Corporation, Depew, N. Y., extensive revisions are made on drawings . . . and prints are ready for mailing to customers—hours, even days, ahead of the old schedule.

See how it's done—all so easily—with Kodagraph Repro-Negative Paper . . . another versatile photographic material in the famous Kodagraph line.

1. A basic drawing—which must be revised to meet the individual customer's specifications—is exposed on Kodagraph Repro-Negative Paper in a standard print-making machine; then the print is processed in standard photographic solutions. An easy *roomlight operation* that produces a negative photographic intermediate from the original drawing.

2. The draftsman quickly obliterates the unwanted detail on the Kodagraph Repro-Negative print with opaquing ink. From this print, a positive Repro-Negative copy is made; the draftsman simply adds the new design . . . and a print-making master is ready to produce the required number of customer prints. *Ready* in a fraction of the time required when the unchanged design was retraced in full.

Symington-Gould also saves time and dollars with Kodagraph Autopositive Paper and Cloth, which are processed in the same easy manner as Repro-Negative Paper, but produce positives *directly* from the originals.

Write for free copy of "Modern Drawing and Document Reproduction." It gives details on the revolutionary Kodagraph line, which you, or your blueprinter, can process . . . quickly, economically.

Kodagraph Reproduction Materials
"THE BIG NEW PLUS" in Engineering Drawing Reproduction
EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.
Kodak

If you write maker identify as **IEN - 10664**

UNIVERSAL CHUCKS

save time . . .

save money . . .

- low first cost, due to simple design.
- wrap-around gripping action eliminates scored tool shanks.
- precision manufacturing assures tools running true.
- sizes from 1/16" to 1½", shanks to fit any type machine.

Standard Collet Chucks for a wide variety of applications.

Floating Chucks for reaming and tapping.

Coolant-Fed Chucks for deep hole drilling.

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

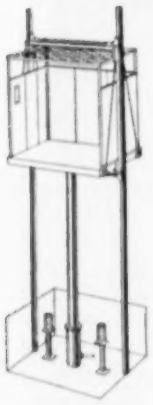
173-A

If you write maker identify as **IEN - 10665**

Rotary Oildraulic®

HEAVY-DUTY ELEVATORS

Easy to install economical to operate



FEATURES:

- Modern hydraulic operation
- No costly, unsightly penthouse
- Smooth starts and stops
- ¼" accuracy on landings
- Low operating and upkeep expense
- Rugged car construction
- Engineered for power truck loading
- High efficiency power units
- New Oildraulic Controller
- Capacities up to 100,000 lbs.

Over 65,000 Oildraulic elevators and lifts are now in use . . . backed by Rotary's coast-to-coast organization.

MAIL NOW FOR NEW CATALOG

ROTARY LIFT CO., 1015 Kentucky, Memphis 2, Tenn.

Send catalog on Rotary Oildraulic Elevators to:

Name _____

Address _____

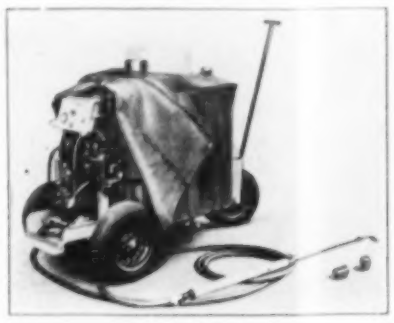
Rotary

OILDRAULIC ELEVATORS

If you write maker identify as **IEN - 10667**

CLEANING . . Steam spray machine is oiled fired to deliver hot solvent

Source: HOMESTEAD VALVE MFG. CO.
P. O. Box 85-A, Coraopolis, Pa.



Motor drives pump

New mounting, on 16 by 4-in. rubber tired wheels, features this new Model-JO Hypressure Jenny machine. It has been assembled for mobile duty on construction operations and in yards. It can be rolled over rough ground without difficulty.

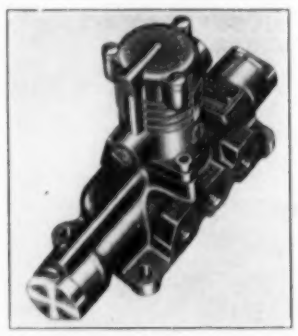
The motor driven oil fired equipment delivers through a length of hose and nozzle. Vapor spray output rates 90 gal. per hour. Series-1200, also available, rates 120 gal. per hour.

Control centers at the nozzle where the operator can start and stop the unit at a distance of 100 ft. or more from the machine. A full-powered steam blast is delivered at the nozzle in about 90 sec. from a cold start. A chemical solution tank is a part of the assembly. A zippered canvas machinery cover protects the unit when it is standing idle.

If you write maker identify as **IEN - 10668**

VALVE . . Solenoid pilot operated, three and four way, 35 to 150 pounds

Source: VALVAIR CORPORATION
949 Beardsley Ave., Akron 11, Ohio



30 valves in line

Illustrated is new assembly of the solenoid operated pilot valve, previously described IEN-569-53, and the company's new 3 and 4-way pressure operated control valve. The assembly is available with main pipe connections ranging from ¼ to 1 inch. The ⅜-in. foot mounting assembly measures 7¾ by 2¾ by 4¾ inches. Operating pressure range, 35 to 150 lb., applies to air or hydraulic fluids.

Cast bronze is employed in the sub-base and main valve body. The spool is chromium plated stainless steel with a polished finish. Hycar O-rings seal against leakage. The solenoid coil is replaceable and can be specified for standard ac. or dc. characteristics. It can be held steadily on closed circuit. Maximum current consumption is 10 watts.

If you write maker identify as **IEN - 10669**

Statikil is a new liquid packaged in spray cans, with Freon as the propellent, to eliminate static in connection with printing operations. J. E. Doyle Co., 1218-22 W. 6th St., Cleveland 13, Ohio, offers the liquid for spraying on press tympans, feedboards, delivery mechanisms. It is effective also on folding machine rollers, ruling machines, and as an anti-static dressing on drive mechanisms.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10670**

Protect Your Plant With

DUNKING STATIONS

The safe solution to your plant smoking problem! Sipco Dunking Stations prevent fires. Cigarettes, cigars, matches, etc. immediately extinguished—no smoldering—no fire hazard! Built specifically for hard industrial use—and abuse.

Unit No. 1—Heavy cast aluminum canister, attractive metal sign, upright and heavy weighted base for use on floors, aisles, etc.

Unit No. 2—Same as Unit No. 1 except without upright and base. Easily mounted on walls, columns and posts.

Unit No. 3—Canister alone, with mounting bracket.

Write now for illustrated folder which gives complete details.

STANDARD INDUSTRIAL PRODUCTS CO.
Dept. N, 116 South Garfield Ave., Peoria, Ill.

If you write maker identify as **IEN - 10671**

KENT CUTS COSTS

Special large capacity for wet and dry pick-up

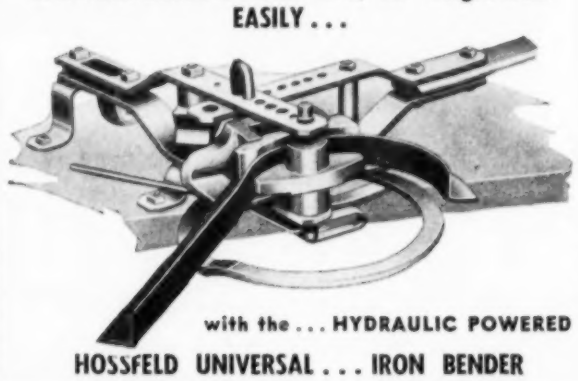
- 3 TIMES FASTER than hand mopping. Converts easily for dry pick-up.
- EXTRA POWERFUL VACUUM sucks dust, dirt from hardest-to-reach places.
- MOBILE UNIT with extra 27-gal. tank provides ample capacity for efficient, non-stop operation. Vacuum unit easily detachable for small area use.
- DOUBLE FANS produce high suction without excessive motor speed; assure long bearing life.
- AUTOMATIC SHUT-OFF VALVE prevents overflow of liquid into fans, motor.

WRITE NOW FOR FULL DETAILS!

THE KENT CO., INC.
437 CANAL ST.
ROME, N. Y.

If you write maker identify as **IEN - 10672**

ONE MAN bends 2" x 2" x 3/16" Angle Iron EASILY . . .



with the . . . HYDRAULIC POWERED HOSSFELD UNIVERSAL . . . IRON BENDER

YOU GET more bending power, greater production, lower labor costs with this HYDRAULIC UNIT . . . smooth, easy bending of rounds, flats, pipe and angle irons . . . in rings, coils, angles, "S" and "U" bends . . . eyebolts, spring eyes, etc.

The HOSSFELD HYDRAULIC BENDER is your answer to improved quality, greater accuracy and faster, more efficient operation.

Samples of Bar Bending

ASK US TO HELP YOU . . .
WRITE NOW FOR COMPLETE DETAILS

HOSSFELD MANUFACTURING COMPANY
424 WEST 3RD STREET • WINONA, MINN.

If you write maker identify as **IEN - 10673**

IT'S ALL IN THE HEAT TREATMENT

ORIGINATORS OF SUPER SAFE STEEL STAMPS

The "Tough" head to absorb hammer blows without crushing or distorting — The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

We are also manufacturers of—
- Special branding and knurling wheels.
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools
- Inspectors Hammers

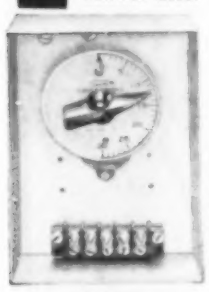
WRITE TODAY for ADDITIONAL INFORMATION

PITTSBURGH STENCIL and TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

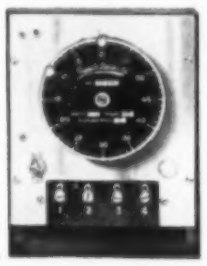
If you write maker identify as IEN - 10674

Performance . . .

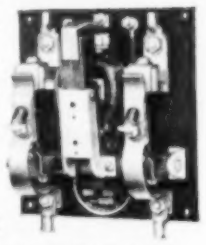
Zenith means "highest point." This literally describes Zenith dependability, "on the dot," as shown by records of long trouble-free, maintenance-free service in widest range of control uses.



Zenith automatic controls



Cover the field: Magnetic Contactors, Remote Control, Reset, Interval and Process Timers, gearless, clutchless Impulse Timers, Program Clocks—also special equipment for your special needs.



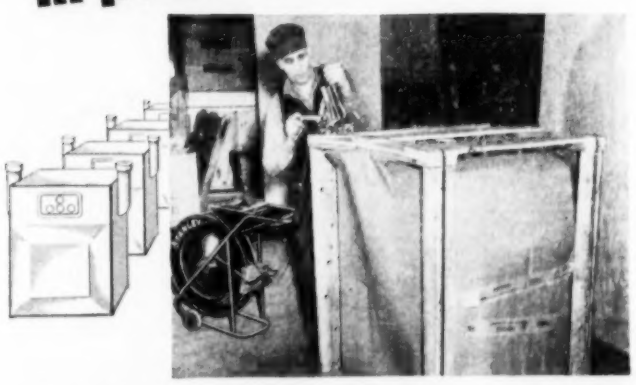
WRITE NOW FOR COMPLETE CATALOG!

See classified telephone directory for name of local distributor

ZENITH ELECTRIC CO.
166 West Walton Street Chicago 10, Illinois

If you write maker identify as IEN - 10675

$20,000 saved yearly in packing gas meters



Costs were slashed from $25,000 to less than $5,000 annually at American Meter Co., Philadelphia by developing a new method of packing meters using the Stanley Steel Strapping System. Instead of packing them in conventional crates and boxes, gas meters are now steel-strapped between two wooden frames using plain boards as corner pieces. This method is fast, easy, economical. No nails are needed. Lumber is reused in return shipments to the company.

Very substantial savings are being made with the Stanley Steel Strapping System in packing and shipping products of every type. Why not see how much the Stanley Man can save *you?* He'll install the Stanley Steel Strapping System on a 30-day trial. No obligation. Just mail the coupon below.

STANLEY STEEL STRAPPING SYSTEM*

Reg. U.S. Pat. Off.

*A MAN thoroughly experienced in steel strapping applications—the Stanley Packing and Shipping Engineer.

A METHOD adaptable to any requirement—the Stanley Steel Strapping System, with representatives in 32 principal cities.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

THE STANLEY WORKS, Steel Strapping Division
204 Lake St., New Britain, Conn.

☐ Yes—the 30-day trial interests me. Have the Stanley Packing and Shipping Engineer call.

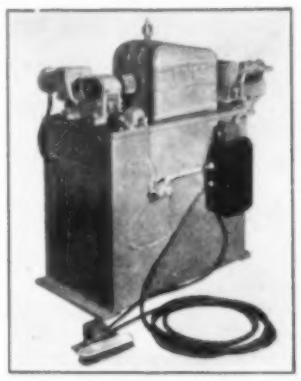
☐ Send me complete information about the Stanley Steel Strapping System.

(Please write name and address in margin of page)

If you write maker identify as IEN - 10677

BURRING . . Rotating cutter machine for tube, rod, also chamfers, faces

Source: PINES ENGINEERING CO.
638 Walnut St., Aurora, Ill.



The tools rotate

Series 700 is a new machine in the company's line of end finishing equipment for tube and bar stock to 3 in. in diameter. It has a 2-in. stroke and maximum spindle speed of 2,000 rpm. The spindle is equipped with a Bellows air cylinder and Hydrocheck to control the feed rate. The work is held in an air operated chuck. Control centers at a foot switch to close the chuck, retract the work locating stop and move the spindle through the machining cycle. Advance and retraction take 1½ sec. **Tools** and chuck jaw inserts are interchangeable for varying work diameters within the maximum 3-in. diameter capacity. The machine occupies a floor space measuring 20 by 39 inches. The spindle unit overhangs 18 in. to the rear. Weight is 850 pounds.

If you write maker identify as IEN - 10678

BORING . . Adjustable head feeds cutter to bore, face, recess

Source: KARL A. NEISE
404 Fourth Ave., Room 1308, New York 16, N. Y.

Please note our error

We call your attention to an error in our description of the adjustable boring head in IEN-8563-53. We stated that one graduation of the sensitive adjustment is 0.005 in. on the diameter. This should have read 0.0005 inch.

If you write maker identify as IEN - 10679

FASTENING . . Strapping anchor holds load in a steel freight car

Source: MACLEAN-FOGG LOCK NUT CO.
5533-37 N. Wolcott Ave., Chicago 40, Ill.

Permanent in car

Lading Strap Anchor is a new steel pocket type fitting, available in two types, to weld or secure by bolts in the steel wall of a freight car. The fitting carries an integral tongue in the pocket face to take a loop of steel strapping after the loop has been formed and sealed with the regular strapping tools. The loop slips freely under the tongue of the anchor where it locks in place until purposely removed. If the strapping sags in transit, it locks more securely in the anchor fitting. The strap can be removed without any tools when the car is unloaded.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10680

MACKLIN Announces New M. M. Carbide Cutting Wheel With Added Abrasive

Revolutionary in methods and manufacture, the new M M wheel, embedded with loose abrasives, is setting sensational records in grinding carbide tools. In some cases it has reduced grinding time 50%, increased wheel life 300%. Write Dept. 95 for literature and complete information.

MACKLIN COMPANY
Manufacturers of GRINDING WHEELS AND OTHER ABRASIVE PRODUCTS
JACKSON, MICHIGAN

If you write maker identify as IEN - 10681

60-DAY FREE TRIAL

of America's most popular industrial stool

A tired worker costs MUCH more than a good chair

- 4-way adjustable backrest
- Scroll shaped posture seat
- Tamper-proof tubular all-welded construction
- 3 adjustable height ranges.

Now test Royal's famous No. 515 stool in your own plant without cost or obligation. See why the country's top firms choose it for superior versatility and durability. Write for free trial stool today!

metal furniture since '97 Royal

ROYAL METAL MANUFACTURING CO.
175 North Michigan Avenue, Dept 209, Chicago 1

If you write maker identify as IEN - 10682

G. E. announces . . .

NEW RIGID CONDUIT

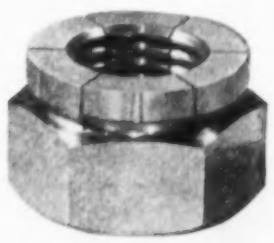
NEW G-E WHITE

Now! A brand-new G-E WHITE rigid steel conduit, featuring easy bending, easy wire-pulling, and improved corrosion protection. A rigidly tested zinc-coating process, "metallizing," bonds a controlled, uniform coating of pure zinc to the conduit, threads and all, without hardening it. New G-E WHITE is lined with a corrosion-resistant coating containing an anti-friction agent for easier wire-pulling. Try it on your next job. Section C29-942, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

You can put your confidence in—
GENERAL ELECTRIC

If you write maker identify as IEN - 10683

one standard FLEXLOC SELF-LOCKING NUT



covers temperature range to 550°F

Because they are all metal and require no auxiliary locking device, FLEXLOCS lock and stay tight even at higher temperatures. See your local industrial distributor for literature and samples or write SPS, Jenkintown 14, Pa.

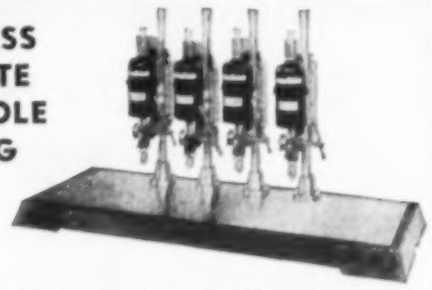
Our Fiftieth Year : A START FOR THE FUTURE

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 10684

EFFORTLESS ACCURATE SMALL HOLE DRILLING



For a decade Electro-Mechano machines have been used successfully by leading manufacturers. Proven design for small hole precision work includes:

- Super accurate chucking with choice of three types giving runout of .001", .0005" or adjustable to absolute concentricity.
- Minimum side play through use of smaller precision spindle bearings and widely spaced quill bushings.
- The exact speed for best drilling with continuously variable speed control: 150 to 4000 RPM, 1000 to 10,000 RPM or 2500 to 15,000 RPM.
- Minimum vibration—high speed units have direct motor drive, no belts.
- Special slow quill feed on dual feed models for drilling below No. 60. Air feed models with hydraulic control for high production small hole drilling.

Replace your old drilling equipment with top efficient Electro-Mechano Precision Drilling Machines. Your drilling problems and inquiries are welcomed.

WRITE FOR LITERATURE:

THE ELECTRO-MECHANO CO.
269 E. ERIE ST. MILWAUKEE 2, WIS.

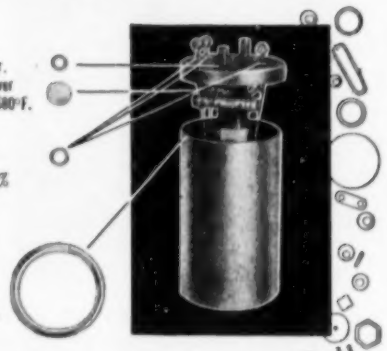
If you write maker identify as IEN - 10685

3 Soldering Operations in 1 Easy as ABC with KESTER "SOLDERFORMS"

A Solder screws and stud to can cover. "Solderform" Disc & Rings 5% Silver —95% Lead Alloy. Melting Point 680°F.

B Solder glass terminals to cover. "Solderform" Rings 63% Tin—37% Lead Alloy. Melting Point 361°F.

C Hermetically seal cover on can. "Solderform" Ring 28.5% Bismuth—28.5% Tin—43% Lead Alloy. Softening Point 250°F.



Here's a typical example of a tough resistance soldering job involving progressively lower melting temperatures. Kester "Solderforms" made sure this high precision oscillator coil came through every test successfully.

WRITE TODAY for free "Solderform" samples and literature.

KESTER SOLDER COMPANY
4211 Wrightwood Ave. • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 10686

TWO EASY WAYS TO GET COMPONENTS IN LARGE QUANTITIES

The first way is to make them yourself—of easily-machined Synthane laminated plastics. The second way is to let us make them for you—of the same light-weight, strong, hard, dense, chemically-resistant, dielectric material. We have the experience and facilities for fast, large-scale fabrication of parts. The coupon will bring you complete information.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.

Gentlemen:
I'd like to know more about Synthane laminated plastics. Please send your catalog to . . .

*Name*_____
*Address*_____
*City*_____ *Zone*____ *State*____

If you write maker identify as IEN - 10687

SAWING . . Attachment for drill to reciprocate a saw blade or a file

Source: PRODUCERS & DISTRIBUTORS INC.
712-16 S. 6th St., Allentown, Pa.

Key-Hak Bulletin upon request

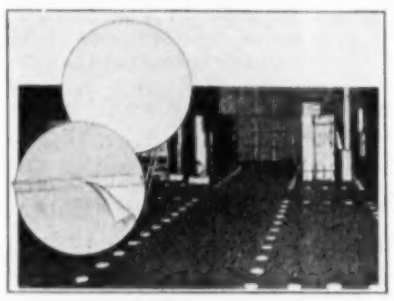
New design of the Key-Hak attachment, previously described IEN-7714-49, employs ball bearings in the operating mechanism and mounts a new formed steel guard on the head for the saw blade. Improved method of assembly also provides for positive gear mesh with the correct amount of clearance at any speed. A new type of sealing compound eliminates the possibility of grease leakage.

The attachment is designed to cut directly, without need for a starting hole, into 20 gage or lighter sheet metal and into wood of any thickness. Special blades are available to cut stainless steel, Monel Metal, chrome vanadium steel, bronze, copper, aluminum, zinc, lead. The blade can be guided to follow a straight or irregular outline.

If you write maker identify as IEN - 10688

MARKING . . Colored plastic discs, adhesive faced, to outline aisles

Source: W. H. BRADY CO.
725-29 W. Glendale Ave., Milwaukee 12, Wis.



Samples on request

Four colors include yellow, red, green and white in this new Aisle Marker line of self-adhesive plastic discs. Four diameters range from 2 to 5 inches. Thickness is 0.005 in. so the discs lie essentially flush on the floor and present no obstruction.

Application follows stripping the protecting paper from the adhesive face. Then the disc is pressed in place on any clean dry floor. It can be used also for signal purposes on walls and columns. If a disc is damaged it can be replaced. There is no need to hold up traffic to make an installation. Acids, oil, grease, alkalis, common solvents have no effect upon the holding power.

If you write maker identify as IEN - 10689

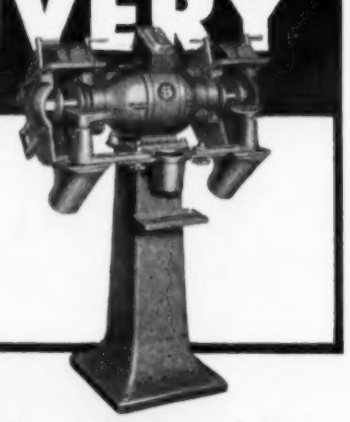
Kathabar dehumidifier equipment, manufactured by Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio, has been applied successfully to prevent cargo corrosion on a freighter traveling from Sparrows Point, Md., through the Panama Canal to Seattle, Washington. The equipment was started after the ship took on an 11,000-ton load of finished steel and the hatches were closed. It eliminates sweating in the ship and the cargo so the latter was practically free from corrosion from any source.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10690

IMMEDIATE DELIVERY

U. S. ELECTRICAL TOOL MODEL 500 UTILITY FLOOR GRINDERS



Totally enclosed motors, ball-bearings in dust-tight housings, ruggedly constructed base and frame, for heavy-duty service. Push button starters, with overload protection. Available in five sizes 1 to 5 H.P., 220/440 volts, 60 cycles, 2 or 3 phase. Write today for name of Distributor and catalog No. US 23.

United States Electrical Tool Division
THE EMERSON ELECTRIC MFG. CO.
1050 Findlay St., Cincinnati 14, Ohio

If you write maker identify as IEN - 10691

. . . for the first time in Industry . . .

A BALL BEARING BUSHING *for applications in limited space*

A NEW Anti-friction Bearing that:

. . . . improves performance at low cost.

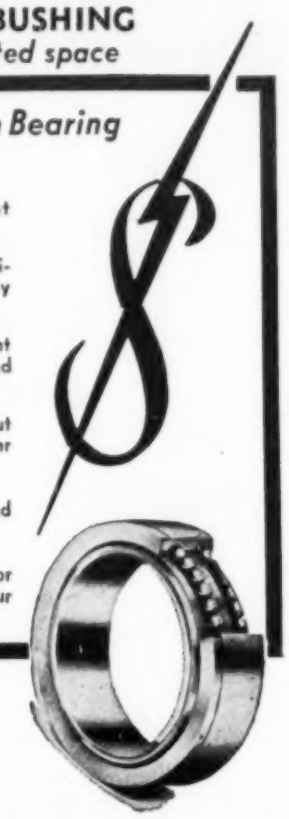
. . . . provides maximum capacity in limited space . . . . only 1/4" section height.

. . . . increases life of equipment without imposing weight space and cost burdens.

. . . . provides lubrication without making it a problem for designer or user.

Write for folder giving sizes and load-speed ratings.

Ask our Engineering Department for its advice and assistance on your problems.

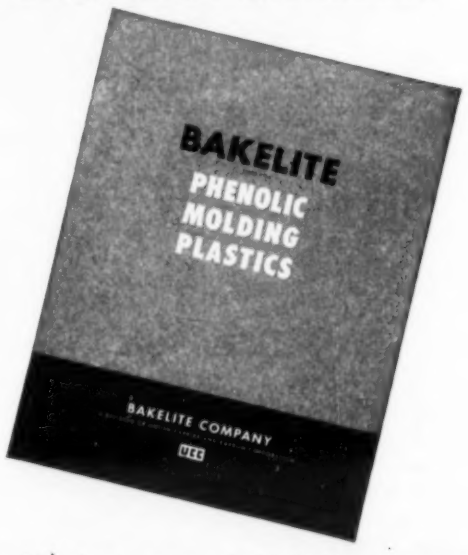


SPLIT BALLBEARING CORP.
LEBANON, NEW HAMPSHIRE

If you write maker identify as IEN - 10692

NEW GUIDE TO A PIONEER PLASTIC

Booklet Gives Latest Information



Here's a *new* booklet about a group of *old* plastics—BAKELITE Phenolics. It contains helpful, up-to-the-minute information on these materials that have served virtually all industries and are constantly finding new uses. Designers and manufacturers can profit by reviewing the tables of technical data, descriptions of properties, and applications in many fields.

The booklet features five classes of BAKELITE Phenolic Molding materials:

BAKELITE General-Purpose phenolic molding plastics are economical . . . easy to handle . . . have all-round serviceability. These plastics feature water resistance, handsome appearance, good impact strength, minimum odor. Typical applications include bottle caps, radio cabinets, instrument casings, brush handles.

BAKELITE Special Higher-Strength phenolic molding plastics have greater impact strength than general-purpose phenolics. They also have improved moisture resistance under longer periods of immersion. Applications include washing machine agitators, telephone handsets, electrical plugs and receptacles.

BAKELITE Heat-Resistant phenolics have greater heat resistance, are more dimensionally stable. They are used for toaster handles, ignition parts, heater plugs.

BAKELITE Low-Loss Electrical phenolics provide low power factor, low loss, high resistivity, dimensional stability and low water absorption. Uses include capacitor cases and frames, condensers, coil forms, resistors.

BAKELITE Special phenolic molding plastics include those with improved chemical resistance, low frictional phenolics, and X-ray phenolics.

Learn how much BAKELITE Phenolic molding plastics can do for *your* business! Write Dept. RG-14 for your copy of this 20-page illustrated booklet.

BAKELITE
TRADE-MARK
PHENOLIC MOLDING PLASTICS

TRADE MARK
BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada:
Bakelite Company (Canada) Ltd., Belleville, Ont.

If you write maker identify as IEN - 10694

EMBOSSED LABELS

FOR PRODUCT IDENTIFICATION

ANY SIZE LABEL
ANY SIZE LETTERS
ANY METAL — FERROUS OR NON-FERROUS

NO DIE CHARGE

Raised-letter nameplates to your specifications. Less expensive than comparable etched labels.

You can tack-weld, rivet or screw them to your product. You can paint or galvanize over them. All wording will remain sharp and clear.

Write for Literature and Price Quotation

DEPT. A

TECH PRODUCTS, INC.
442 Mosel Ave. Staten Island 4, N. Y.

If you write maker identify as IEN - 10695

Announcing the NEW

Snap-Tite's Hi-Flow LINE

FULL SWIVEL

QUICK

CONNECT *and* DISCONNECT

COUPLERS

FOR

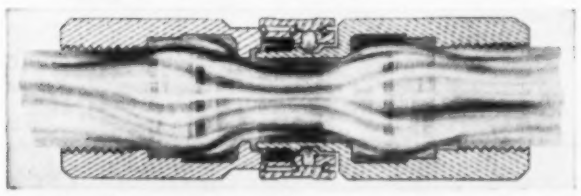
AIR • WATER • OIL • GAS
STEAM • CHEMICALS, Etc.

MADE IN SIZES

1/8" - 1/4" - 3/8" - 1/2" - 3/4" - 1" - 1 1/4" - 1 1/2"
2" - 2 1/2" - 3" - 4" - 6" - 8" - AND UP

MADE FROM

STEEL • BRASS • ALUMINUM
and STAINLESS STEEL



The Greatest Flow in Couplers

Certain territories in the United States and foreign countries available for aggressive manufacturers representatives. Write for details.

SEND FOR NEW TECHNICAL CATALOG NO. VP 83

SNAP-TITE INC.
201 TITUSVILLE RD. • UNION CITY, PA.

If you write maker identify as IEN - 10697

TESTING . . Electronic comparator checks non-ferrous conducting materials

Source: MAGNAFLUX CORPORATION
7302 W. Lawrence Ave., Chicago 31, Ill.

Bulletin FM-100

Magnatest trade names a new electronic instrument that employs the electrical conductiveness of non-ferrous materials to measure hardness, purity. It will sort mixed non-magnetic metals, determine the degree of age hardening of aluminum and magnesium alloys. It can be applied on ingots, sheets, bars, finished parts made of materials such as silver, copper, non-magnetic stainless steels, aluminum, brass, lead, carbon.

A test can be made providing there is a relatively flat area about 3/8 in. in diameter. Samples of known characteristics can be used as masters for comparison of properties in terms of conductivity. Measurements are independent of material thickness greater than the depth of penetration of the eddy currents produced at the probe.

The instrument is calibrated on a sample of known characteristics. Then the probe is placed against the surface of the material to be compared with the sample. The dial is turned to zero-set the meter and then is read on its large scale. The dial is set, for sorting work, to an average value and small differences are read on the meter. Accuracy is within 1 per cent of full scale. Operation is on 110-volt 60-cycle ac. List price of the new instrument is $1,750.

If you write maker identify as IEN - 10698

PRESS . . Bench type power drive, 3/4 to 2 in. stroke, 5 and 10 ton

Source: KLAAS MACHINE & MFG. CO.
4315 E. 49th St., Cleveland 25, Ohio

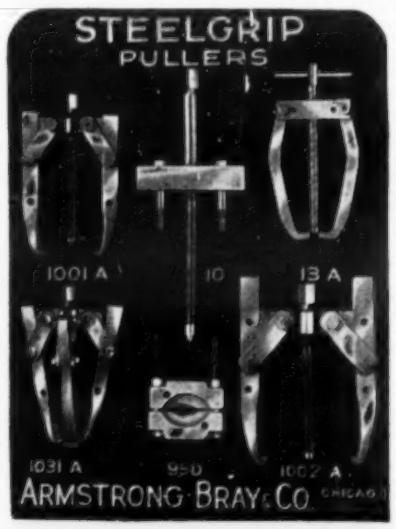
Roll feed to order

New frame design, square between the head and column for tool and work clearance, and a new tool holding ram clamp have been added to the Emco line of bench type presses. The 5-ton machine is made with a 3/4, 1, or 1 1/4-in. stroke. It lists at $295 with a stand, motor bracket, sheaves, V-belt and motor on 3/4 or 1-in. stroke. The list is $310 for the 1 1/4-in. stroke. The 10-ton press lists at $570 with complete equipment and a 1 1/2 or 2-in. stroke. A 3-phase 220-volt motor is standard. Other characteristics are to order.

Ram adjustment is through 1/2 inch. Throat dimension is 3 1/8 and 5 inches. The bed measures 6 1/2 by 8 1/2 in the small machine. It is 9 by 13 in. in the larger one. Ram to bed ranges from 5 5/8 to 6 in. on the two machines. Speed is 300 and 150 spm. Weight is 158 and 400 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10699



The 6 most needed pullers

A Complete Package Unit . . .

These popular pullers come on a permanent steel tool rack. The sizes and type of STEELGRIP Gear, Wheel and Bearing Pullers most frequently needed in tool room, maintenance shop and garage are now packaged on this practical heavy gauge fitted steel board. With these drop forged quality tools, you can pull wheels, gears, pulley pinions and bearings off from shafts easily and quickly without battering or breakage.

Pullers are cadmium plated board finished in deep blue "hammered finish" with gold trim.

Write for catalog of standard and Special Wheel Pullers.

ARMSTRONG-BRAY & CO.
5380 Northwest Highway • Chicago 30, Illinois

If you write maker identify as IEN - 10700

If you write maker identify as IEN - 10701

MOTOR CONTROLS ...via Graybar

FREE Catalog describes all types. Send for yours today.

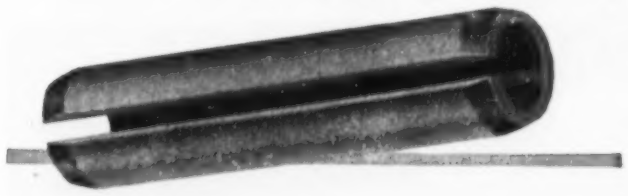
Selecting the right control for *your* application is an easy job with the wide variety of G-E starters, relays, switches, timers, governors and "specials" described and illustrated in this catalog.

Installation and maintenance of these Graybar-distributed G-E Controls is quick and easy. Plenty of conduit knockouts and terminals speed installations. Inspection, change and modification of contacts, coils and magnets are all simple screwdriver-only operations with genuine G-E renewal parts.

For complete information on G-E motor controls, or any of your other electrical needs, check with your nearby Graybar Representative. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 324-129

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN - 10702



SEL-LOK SPRING PINS

won't vibrate loose

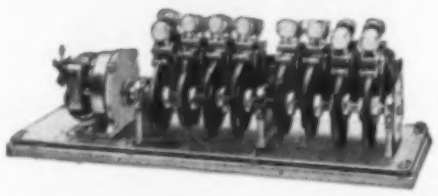
Use them as hinge pins, use them to fasten gears, pulleys and sheaves to steel shafting, use them to replace keys, keyways and cotter pins—they won't work loose. For complete information, write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

Sel-lok spring pins are shock resistant and vibration proof • eliminate expensive reaming operations • replace tapered or grooved pins • easy to insert and remove • reusable • accurate in diameter and length • reduce installation costs • lighter in weight and as strong as a solid cold-rolled steel pin of the same diameter • available in a full range of lengths and diameters

SEL-LOK SPRING PIN DIVISION **SPS**
JENKINTOWN PENNSYLVANIA

If you write maker identify as **IEN - 10703**

8 MILLION Automatic Operations without failure*



with

STALEY TIME CYCLE CONTROLLERS

Staley Time Cycle Controllers give you exact, automatic control for sequence timing of electric circuit operations . . . eliminate the need for time delays and other complicated electrical equipment. Accurate, dependable, trouble-free service is assured by the use of positive-contract Staley Metallic Mercury Switches. Lightweight, rugged design *plus* ample power for continuous long period operation. Write today for descriptive bulletin. Specify Dept. IEN-405.

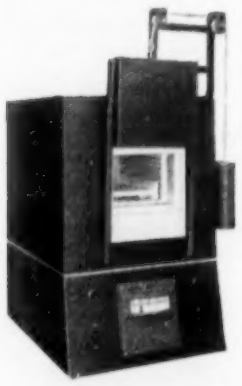
* Constant, *uninterrupted* service for periods of five years or longer attest to the trouble-free performance of Staley Time Cycle Controllers.

ELECTRIC SWITCH CORPORATION
1304 E. Eleventh Street • Columbus, Indiana

If you write maker identify as **IEN - 10704**

Designed for

TOOL ROOM EFFICIENCY



HUPPERT Model 11 FURNACE

Years of low-cost operation on heaviest schedules in tool and die shops, and laboratories have dictated these features for your economy. Huppert Automatic Temperature Control for accuracy to 2000° F—Huppert Multi-Insulation, Heavy-duty Kanthal elements, and fully enclosed contacts. Counter-weighted, tight-sealing door. I.D. 8" x 6" x 12". 220 V. AC. 4½ KW max. load.

Model 11ACB — $440.00 Complete
Model 11BMIF — $287.00 (with input control)

OTHER MODELS

	I.D.	MAX. TEMP. FAHR.	KW	PRICE WITH INPUT CONTROL
Model 869	8" x 6" x 9"	2000°	4	$280.00
Model 12BMIF	8" x 8" x 12"	2000°	6	367.00
Model 12ABMIF	8" x 8" x 18"	2000°	9	471.00
				PRICE WITH TEMP. CONTROL
Model 869	8" x 6" x 9"	2200°	4	$480.00
Model 12ACB	8" x 6" x 12"	2000°	6	520.00
Model 12A-ACB	8" x 8" x 18"	2000°	9	600.00

Models 12 and 12A can be supplied for 2300°F. operation for small additional cost.

Write for Details

K. H. HUPPERT COMPANY
6856 Cottage Grove Avenue, Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

If you write maker identify as **IEN - 10705**

Foley Sharpened Saws CUT HIGH LABOR COSTS

Your saw operator's production jumps 25 to 40% when the saw he uses is sharpened on a new Model 61 Foley Automatic Saw Filer. His saw will cut faster, smoother, run cooler and *stay sharp longer.*

NEW MODEL 61 FOLEY AUTOMATIC SAW FILER

Prove it by 30 Day Trial in Your Own Shop

Try the Foley Automatic Saw Filer for 30 days in your own shop. You'll be under no obligation. See how it sharpens your hand saws, band saws up to 4" wide and cross-cut circular saws 3" to 24" in diameter. Notice how the Foley Automatic Saw Filer automatically corrects uneven teeth caused by poor filing and restores them to even size, shape and spacing. You'll say the Foley Automatic Saw Filer is a "must" for every well run woodworking plant.

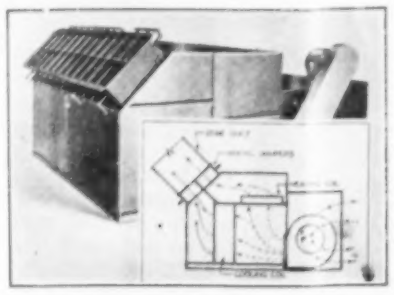
FREE BOOK TELLS HOW — The instruction book that goes with every Foley Automatic Saw Filer is yours for the asking. Here you can read how inaccuracies are eliminated through simple and positive adjustments. This book does a double job . . . helps you cut production costs with better cutting saws and shows you how to lower your saw maintenance costs.

FOLEY MFG. CO.
3369 N. E. 5th St., Minneapolis 18, Minn.
Please send instruction book and information on 30-day trial offer.
Name .....
Address .....

If you write maker identify as **IEN - 10706**

AIR CONDITIONING . . Heater-cooler for air delivery to zones in a building

Source: UNITED STATES AIR CONDITIONING CORP.
3318 Como Ave. S. E., Minneapolis 14, Minn.



Centralized conditioning

Four models in this new multiple zone air conditioner are designed to serve maximums of 12 to 16 separate zones. Capacity ranges from 7,500 to 18,000 cfm. of heated or cooled air per minute. The sectional equipment consists of filter, blower, heating coil, cooling coil and the multiple zone mixing damper sections. The dampers operate independently for each zone to provide temperature regulation in connection with either heating or cooling.

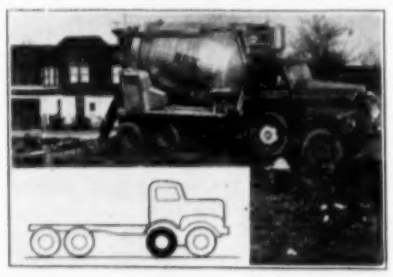
During a cooling season, when heat is not required, the heating coil and the hot deck dampers act as a by-pass. During the heating season the cooling coil and cold deck dampers constitute the bypass if no refrigeration is required. Both heating and cooling coils can be left in operation in either case.

A separate motor, either pneumatic or electric, can be employed for each set of multi-zone dampers for automatic temperature control. The motors are operated from zone thermostats. Water or direct expansion refrigeration is available for the cooling action. Steam or water coils are supplied for the heating side to meet installation requirements.

If you write maker identify as **IEN - 10707**

TRUCK . . Tandem steering axle increases capacity of standard truck

Source: CHAIN BELT CO.
4703 W. Greenfield Ave., Milwaukee 1, Wis.



Details on request

Rex Spangler is a new tandem front axle assembly. It employs the standard front axle on a motor vehicle truck and adds a second front axle back of it to increase the truck's load capacity by 5 to 7 ton. The front axle on the tandem remains in the same location as it occupied on the standard truck. Location is shown in the diagram to the lower left.

It becomes an integral part of the tandem assembly that compensates for surface irregularities, is equipped with center poise power steering and can turn the truck in its original radius. Axle spacing in the tandem is on 55-in. centers. Each axle carries an equal share of the load on the truck.

If you write maker identify as **IEN - 10708**

Green conveyor belts are now available from Main Belting Company, 1239-43 Carpenter St., Philadelphia 47, Pa., for assembly and inspection lines where eye fatigue is a problem. You can order any width to 132 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10709**

PIONEER BELT DRIVEN GENERATORS

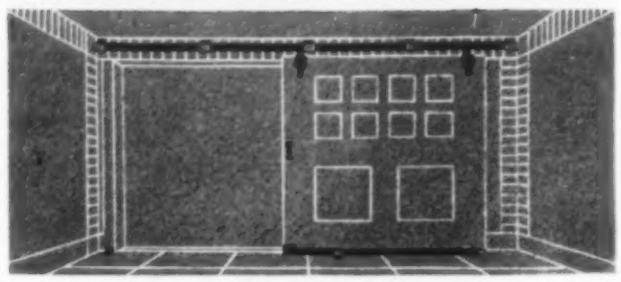
the portable power you need in your plant to **DELIVER CURRENT EFFICIENTLY & ECONOMICALLY!**

For portable power inside or out the plant, Pioneer Generators are *dependable* and *capable* of operating under *all* weather conditions. For Stand-By insurance when regular power fails, generators can run power tools and lights to meet all your needs. *Over 20 years* of manufacturing experience gives you engineering know-how and efficiency. **Write today** for catalogs and prices on pioneer 500 to 10,000 watt Generators for every industrial use.

PIONEER Gen-E-Motor Corporation
5831 West Dickens Avenue • Chicago 39, Illinois

If you write maker identify as **IEN - 10710**

COBURN SLIDING DOOR HARDWARE



. . . LOW INSTALLATION COST
. . . SMOOTH, EASY OPERATION
. . . LONG, TROUBLE-FREE LIFE
. . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION—Denver, Colorado
PACIFIC COAST DIVISION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION

If you write maker identify as **IEN - 10711**

Modernize with MINI-BREAKER®

. . . the amazing new Permanent Circuit Protector that fits like a fuse in standard Edison base fuseholders!

Never before has there been a circuit protective device like MINI-BREAKER! Because here, for the first time, is a rugged U.L. listed permanent Circuit Protector that can actually be used as a *direct replacement* for expendable plug type fuses. There's no additional equipment to buy, no special wiring or rewiring required when used on existing fuse-protected circuits. No installation cost or needless interruption of electrical service, either. Anyone can install MINI-BREAKERS in a mere matter of seconds just like the "one-shot" fuses they're designed to replace.

PROVIDES PERMANENT PROTECTION AGAINST OVERLOADS AND SHORT CIRCUITS!

Yes, MINI-BREAKERS end forever the needless cost and inconvenience of replacing blown-out fuses. They safely interrupt excessive overloads and short circuits . . . tripping instantly on "shorts," but with a built-in time lag to handle temporary starting loads and line surges. 100% trip-free, too. Yet, as soon as the circuit is safe again, all you have to do to restore electrical service is press in and release the shockproof reset button! Simple, practical, convenient! Never need be replaced!

THE ONLY DEVICE OF ITS KIND LISTED BY UNDERWRITERS' LABORATORIES, INC.!

MINI-BREAKER is a precision-built, pre-tested and inspected "Circuit Protector" . . . the only device of its kind listed by Underwriters' Laboratories, Inc. Now available in 15, 20, and 30 ampere ratings, for A.C. service only, up to 125 volt maximum.

MECHANICAL PRODUCTS, INC.
1824 River Street • Jackson, Michigan

Please rush me full details on new MINI-BREAKER today!
NAME _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

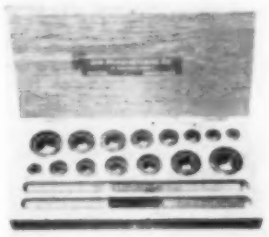
If you write maker identify as **IEN - 10713**

THREAD RESTORER KIT

COMBINATION SET

For shop or master mechanic—17 pieces in polished wooden box—ready for any thread restoring job from 9 T.P.I. down to 32 T.P.I. Contains No. 1 and No. 2 Thread File plus No. S8 and U7 Rethreader Die Kits.

No. 1278 Post Paid $12.95

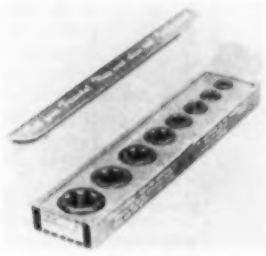


"NU-THRED" FILES

For restoring damaged threads on any diameter bolt, stud, axle, or shaft.

No. 1—for 11, 12, 13, 14, 16, 18, 20 and 24 threads per inch.
No. 2—for 9, 10, 12, 16, 20, 27, 28 and 32 threads per inch.

Post Paid $2.50 ea.



RETHREADER DIES

For rethreading damaged threads in close clearances. Same Size as the nut!

No. U-7—for USS ¼-20 to ¾-10 threads, seven sizes.
No. S-8—for SAE ¼-28 to ¾-16 threads, eight sizes.

Post Paid $3.50 kit

MADE and GUARANTEED by

JAW MFG. CO.

43 Mulberry St. Reading, Pa.

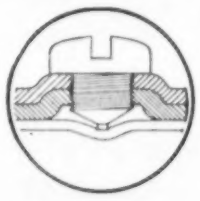
If you write maker identify as **IEN - 10714**

ONLY A SCREWDRIVER—

That's all you need to install new E.M.T. fittings just like this

VIBRATION PROOF!

Unusual holding action of the screw is obtained when the screw is driven home to rest on the boss and the tip of the screw becomes embedded in the tubing wall The connection is a vibration proof bond that cannot be broken or loosened except by releasing the screw. Contact of the screw in the tubing wall performs a safe, permanent ground. Inspection is quick and easy.



SIZES

Connector design for standard boxes and coupling design to join straight runs are supplied in ½, ¾ and 1-inch sizes for standard E.M.T. thin-wall electrical conduit.

ADVANTAGES —

RE-USABLE
ECONOMICAL
EASY TO INSPECT
UNIFORM, SAFE HOLDING ACTION
CLOSE, ACCURATE FIT
PERMANENT GROUND
ELECTRO GALVANIZED
SIMPLE STRONG PRESSED STEEL CONSTRUCTION
NO WRENCH STRAIN ON BOXES
APPROVED BY UNDERWRITERS' LABORATORIES, INC.

ASK FOR BULLETIN 581

National Electric Products Corporation

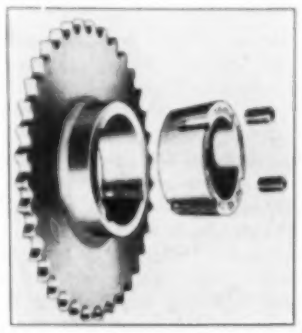
Pittsburgh 22, Pa.

NATIONAL ELECTRIC PRODUCTS — WIRING SYSTEMS

If you write maker identify as **IEN - 10716**

DRIVE . . Roller chain sprockets mount on interchangeable split hubs

Source: DIAMOND CHAIN CO.
465 Kentucky Ave., Indianapolis 7, Ind.



Catalog 753

Taper bored sprockets take Taper-Lock bushings in this new roller chain sprocket line. The design permits changing the bushing only for a change in shaft size. The bushing is available in a range of internal bores in 1/16-in. steps. Two set screws pull it into position to grip both the sprocket and the shaft. The same set screws are employed in two additional holes to press the bushing out. Manufacture is under patent No. 240743.

Stock sizes range from ⅜ to 1¼-in. pitch for No. 35 to No. 100 chain. The smallest sprocket is available with 9 to 36 teeth, the largest from 11 to 54 teeth.

If you write maker identify as **IEN - 10717**

PROTECTING . . Liquid neoprene to coat cotton work gloves and aprons

Source: INDUSTRIAL ADHESIVES INC.
4206-10 Airport Road, Dept. 1, Cincinnati 26, Ohio

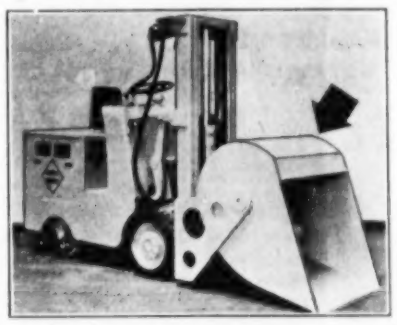
List price $1.50 per pint can

Glove-Kote is a new waterproof, oil and grease resistant compound of neoprene in liquid form. It is applied to work gloves, aprons, tarpaulins, canvas shoes, with a paint brush or can be rubbed into the material by hand. One or two coats depend on the required service. In the case of two coats the first one is allowed to dry over night then the second is applied and allowed to dry for the following 24 hours.

If you write maker identify as **IEN - 10718**

TRUCK . . Scoop attachment to handle small-lump bulk materials

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio



Rates 3,200 pounds

New scoop has been designed to handle bulk materials, such as small-lump coal, salt, sulphur, grain, following application on the company's hydraulic powered fork truck. It is supported on trunnions with anti-friction bearings and is operated by a double acting hydraulic cylinder that connects into the hydraulic lines on the truck. Front scoop edge has a replaceable wear strip. Content is 25 cu. ft., width about 37½ inches.

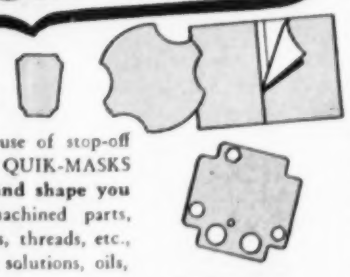
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 10719**

NEW MASKING METHOD

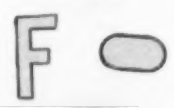
for SPRAY PAINTING • PLATING • SAND BLASTING

PRE-CUT SELF-STICKING QUIK-MASKS



Hundreds of plants now using Brady QUIK-MASKS are saving time and money **by completely eliminating** costly hand work, use of stop-off materials and metal shields. QUIK-MASKS are **pre-cut to the exact size and shape you need.** Protect name plates, machined parts, plated and polished sections, holes, threads, etc., from paint, plating and cleaning solutions, oils, acids and sand blasting.

QUIK-MASKS are pre-cut from special "SCOTCH" brand plating and masking tapes. They stick without moistening—are quickly applied and removed. Circles, squares, rectangles, hexagons, letters and numerals stocked in many sizes. Nameplates and other specials made to your exact requirements.



FREE SAMPLES

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF STICKING PRODUCTS
W. H. BRADY COMPANY
756 W. Glendale Ave., Milwaukee 12, Wis.

If you write maker identify as **IEN - 10720**

with PLASTIC ROCK!

Trowel a smooth, tough, malleable surfacing right over your old concrete or wood floor

Plastic Rock comes complete, packed in barrels; nothing more to buy; no "formula" to confuse. Simply mix and trowel over old floor; adheres to concrete, wood, steel; average depth ⅛"; perfect feather edge; hundreds of tons rolling on steel wheels only improve it. Spark-proof, skid-safe wet or dry; dustless, noiseless; cannot splinter, crumble, curl or loosen. Used by largest industries and railroads.

ASK FOR REPORT 220-Q-9.

UNITED LABORATORIES, INC., 16803 Euclid Ave., Cleveland 12, Ohio

PRODUCTS AND PROCESSES for PROTECTING PROPERTY

Field Representatives All Over The World

If you write maker identify as **IEN - 10721**

ACCURATE

POWERS

HEAT REGULATOR

Unsurpassed for reliability and power to operate large or small diaphragm valves for accurate temperature control of Water Heaters, Heat Exchangers, Jacket Water for Compressors, Diesel and Gas Engines, and many industrial processes.

IMPORTANT FEATURES

• ***Adjustable Sensitivity*** and over-heat protection. • ***Calibrated Dial*** temperature adjustment. • ***Ranges*** 50 to 250° F. and 150 to 350° F. • ***Simple, Rugged Construction*** withstands vibration and insures many years of reliable service. Requires 15 lb. supply of compressed air or water for its operation. • ***Small Size*** — regulator head is only 2⅞" x 3⅝". Write for Bulletin 316. (a76)

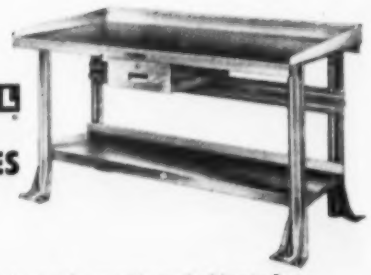
THE POWERS REGULATOR CO., 3437 Oakton St., Skokie, Ill.

60 Years of Temperature and Humidity Control • Offices in Over 50 Cities

If you write maker identify as **IEN - 10722**

standardize on standard

HALLOWELL WORK BENCHES



HALLOWELL FEATURES

Sturdy, rigid—require no bolting to floor
4 lengths, 3 widths, 3 heights—all standard
3 top materials—steel, Presdwood on steel, laminated wood
Use them as single units or continuous benches of any length
Functional design, neat appearance

Standardized construction with *standard* accessories permits you to *custom build* HALLOWELL benches to fit your requirements. Stocked and sold by industrial distributors. Write for literature. SPS, Jenkintown 14, Pa.

Our Fifteenth Year : A START FOR THE FUTURE

HALLOWELL SHOP EQUIPMENT DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 10723

INSTANT SETTING CONCRETE FLOOR PATCH

TEST IT ON TRIAL OFFER

TOUGH AS NAILS! FAST!

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into hole or rut — tamp smooth — truck over! No waiting! INSTANT-USE bonds tight to old concrete — right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment.

MAIL COUPON for TRIAL OFFER and FREE HANDBOOK

INSTANT-USE

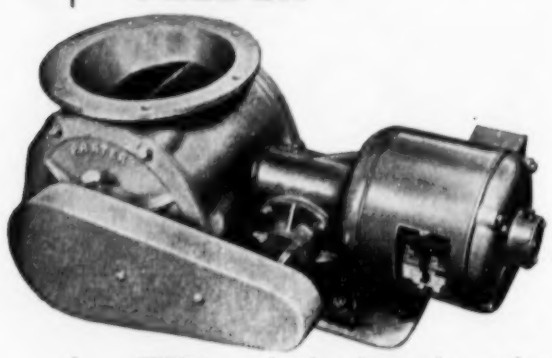
FLEXROCK COMPANY (Offices in principal cities)
3606-Z Filbert St., Philadelphia 4, Pa.

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MAINTENANCE — no obligation. (Clip and attach Coupon to Co. letterhead).

Name .....
Title .....
Company .....
Address .....

If you write maker identify as IEN - 10724

PRATER ROTARY AIRLOCK FEEDER



FEEDS powdered and granular products into conveying line—quickly and accurately!
STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!
PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.
RECOMMENDED in the processing of: Ball Clay, China Clay, Diamaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER **PRATER PULVERIZER COMPANY**
1536 So. 55th Court • Chicago 50, Ill.

If you write maker identify as IEN - 10725

Now Ready!

NEW CATALOG ON TUTHILL MODEL CK HIGH PRESSURE PUMPS

For Designers

For Production and Maintenance Men

Write for this new Tuthill Model CK Catalog No. 103.
It's a helpful guide to selecting the right pump for hydraulic service where the operating pressure does not exceed 400 p.s.i. Included is complete data on mechanically-sealed units and automatic reversing types in capacities from 5 to 200 g.p.m.

A copy is yours for the asking.

TUTHILL PUMP COMPANY
Dependable Rotary Pumps since 1927
939 East 95th Street, Chicago 19, Illinois

Canadian Affiliate: Ingersoll Machine & Tool Company, Ltd. Ingersoll, Ontario, Canada

If you write maker identify as IEN - 10726

GENERATOR . . Engine driven, 5 kw. on 110 to 440-volt 60-cycle ac.

Source: KATOLIGHT CORPORATION
622-26 N. Front St., Mankato, Minn.

Goes anywhere

Drive for this new generator is by a 2-cylinder, 4-cycle, air cooled gasoline engine. Mounting is on pneumatic tired wheels. The generator is revolving-field design and can be specified for operation on 110/220-volt single phase or 220/440-volt 3-phase 60-cycle ac. Equipment subject to specification includes 6-volt automatic starting for the engine, automatic generator voltage regulation, auxiliary hookup for use as an automatic standby power source.

If you write maker identify as IEN - 10727

SEALING . . Liquid rubber cures chemically to tough consistency

Source: MINNESOTA MINING & MFG. CO.
423 Piquette Ave., Detroit 2, Mich.

Technical data upon request

Dielectric Sealer is a new synthetic rubber material supplied in liquid form. Following application, it cures by chemical reaction to a tough firm consistency that protects against corrosion and vibration and that provides excellent dielectric properties in service.

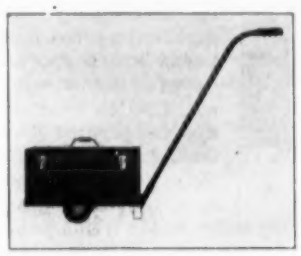
The material retains its physical properties in a temperature range between minus 65 and plus 200 deg. F. It is resistant to attack by oils and liquid fuels. It is suited particularly as a flexible potting compound on electrical wiring connections. The heavy liquid flows readily around the wires for a uniform tight seal with good adhesion to both wires and the surfaces of a connector plug.

It can be applied to electrical connections with a putty knife, a spatula or a flow gun. Packaging is in partial pints to gallons. The accelerator, required to set up the chemical reaction, is packaged separately with each container of the material.

If you write maker identify as IEN - 10728

TRUCK . . Two wheel hand unit to mount, carry a worker's tool box

Source: BELLE CRAFT CO.
2532 N. Lincoln Ave., Chicago 14, Ill.



Truck only about $9

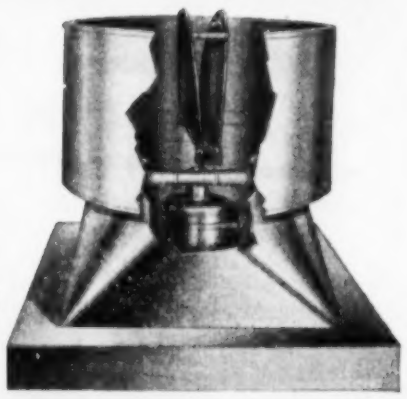
Model L-101 is a new single handle tubular steel hand truck mounted on two rubber tired, oilite bearing wheels and finished in green enamel. Six sizes are available for most standard size tool boxes. A rubber handle grip completes the assembly. The truck can be supplied alone or in assembly with a tool box.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10729

AIR

Automatic ROOF VENTILATOR



Furnished as standard with curb base as illustrated.

Industrial Air Automatic Roof Ventilators are provided with counter balanced damper flaps which open when the fan is started, and close when the fan is stopped, sealing off the discharge stack and preventing any down drafts or loss of heat.

The vertical discharge insures the immediate dispersal of the exhaust air well above the building level and prevents the re-entry of exhaust fumes through adjacent windows or supply ducts.

Represented in all principal cities
Write Dept. 500 for complete catalog

THE HARVEY P. BERTRAM CO.
561-565 READING ROAD - CINCINNATI 2, OHIO

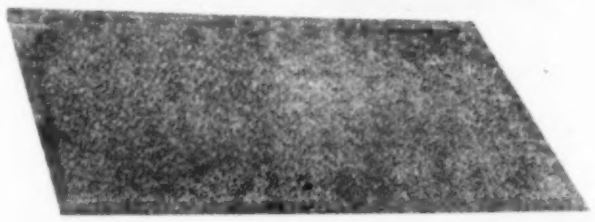
If you write maker identify as IEN - 10730

All these are RECORA Switchmats

. . . thin, mat-like pressure switches that close circuits whenever pressure is applied to any point in their area; open circuits when pressure is released. Widely used as "area switches" on floors and platforms for automatic door openers, alarm systems, traffic controls etc. Used around machinery for foot switches, safety stations and emergency cut-outs. Available in any size, shape or quantity, for integral, built-in parts of mechanisms, devices and systems.

Operate at pressures from few ounces up, on low voltage, directly connected or through relays. Hermetically sealed between sheets of wear, acid and oil resistant vinyl plastic. Standard units, or to your specifications. Technical service supplied; just send us your switch problems.

Catalog Sheet CS-1 describing Recora Switches and control accessories sent upon request.



THE RECORA COMPANY
56 West 103rd Street Chicago 28, Ill.

If you write maker identify as IEN - 10731

high jobs go fast on the

safety level.....

Dayton's special "Safety Level" working platform gives workman complete confidence. He works faster, more efficiently, uses both hands. Check the "big 6" features that make Dayton your best buy.

1. Rail-guarded "Safety Level" platform.
2. Locks in place automatically.
3. Rubber safety shoes.
4. Light weight—great strength.
5. Economically priced.
6. Complete size range 3' to 16' in height.

Write Dept. J for Bulletin

Dayton safety ladders

Dayton *safety ladder co.*
2339 Gilbert Ave.
Cincinnati, Ohio

If you write maker identify as IEN - 10732

Here it is!

WAGNER "MOTOR-GRAM"

Contains latest complete listings of new and rebuilt electric motors and generators. Fast service . . . reliable guarantee . . . low prices.

FREE! Send for your copy TODAY!

ARTHUR WAGNER COMPANY
1431 West Randolph Street, Chicago 7, Illinois

If you write maker identify as IEN - 10733

FAST MOVING LINE TO MORE PROFITS

VIA "STREAMLINER" CONVEYORS

Yes . . . on the move to faster handling of goods, at a reduction in handling costs! If you've never visualized a "Streamliner" engineered conveyor in your plant, just take a moment to determine where you could use one. Shipping? Receiving? Production? Storage? No matter where, "Streamliner" Conveyors will save you time, money and man-effort. Get complete facts today by requesting Bulletin 302.

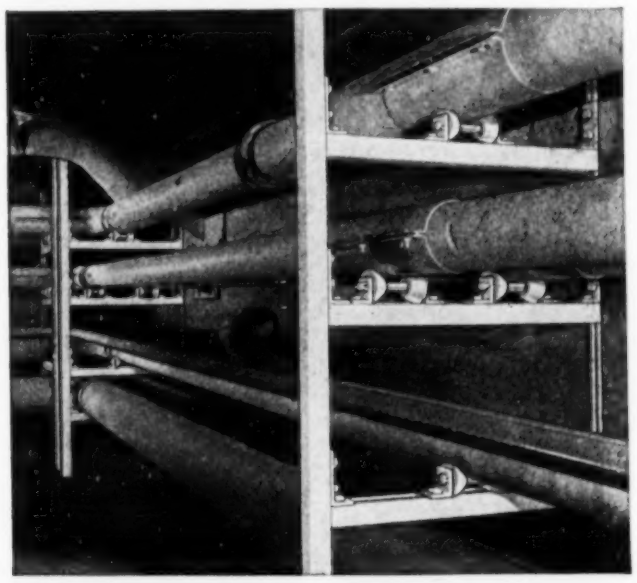
Ferguson designs and manufactures a variety of conveyors and conveyor systems to meet individual requirements.

HARRY J. FERGUSON COMPANY

125 WEST AVENUE, JENKINTOWN, PENNA.

If you write maker identify as IEN - 10734

Tunnel job showing how UNISTRUT continuous run concrete inserts can be installed vertically or horizontally, or at any angle required. Note how stanchions are built with UNISTRUT channel and fittings.

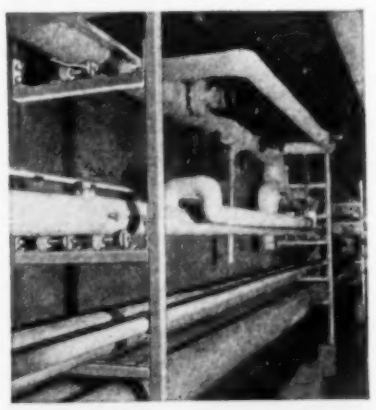


install piping runs with Versatile UNISTRUT®

METAL FRAMING

Adjustable Framing System

assures exact pitch, permits changes or additions at any time, eliminates welding, drilling, special tools, or equipment.



Typical piping installation supported by UNISTRUT framing, concrete inserts and roller pipe supports. Slotted channel permits attachment of fittings at any desired point.

Write today *for New FREE 84-page Pocket Catalog No. 800—for the MAN ON THE JOB!*

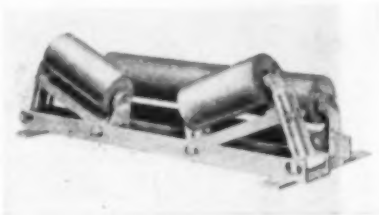
Dept. D9
UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.
Chicago 7, Illinois

THE WORLD'S MOST FLEXIBLE ALL-PURPOSE METAL FRAMING

If you write maker identify as IEN - 10736

CONVEYING . . Adjustable belt idler for gradual change from trough to flat

Source: LINK-BELT COMPANY
305-9 N. Michigan Ave., Chicago 1, Ill.



Ask for Book 2416

Pivoted support brackets are assembled at the two sides of the base of this new adjustable troughing belt conveyor idler. They take sub-bases, also pivoted, on which two ball bearing rolls are mounted. The brackets and the sub-bases are toothed to hold in positive position when bolts are tightened. The arrangement permits changing the angle of inclination from 20 deg. to horizontal to provide for gradual flattening of a belt as it approaches the head pulley.

Two types include a standard Series 100 in seven belt widths from 24 to 60 in. and a Series 200 in six widths from 36 to 72 in. for belts carrying heavy and coarse material. Available also are companion return idlers, shown back of the adjustable unit in the illustration.

If you write maker identify as IEN - 10737

CORROSION PROOFING . . Plastic for strippable coat on metal products

Source: ERNST BISCHOFF CO.
753 Bischoff Ave., Ivoryton, Conn.

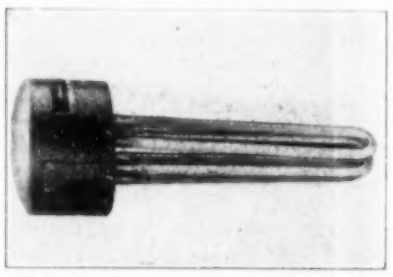
Melt is clear and transparent

Instruments, tools, dies, jigs, and finished parts are dipped into a bath holding the company's new Thermo-Cote D at about 350 deg. F. The liquefied plastic covers the work with a film that solidifies when it cools to protect finished surfaces against corrosion and abrasion. It can be cut and stripped when it is no longer needed, remelted if desired.

If you write maker identify as IEN - 10738

HEATING . . Electric element to immerse in oil, paraffin, water

Source: EDWIN L. WIEGAND CO.
7505 Thomas Blvd., Pittsburgh 8, Pa.



Chromalox design

Type TMO-4, with steel sheathed elements welded to a cast iron flange, and Type TM-4, with copper sheathed elements brazed to a brass flange, are two new tubular type immersion heaters to supplement the company's present series. The former applies in oil or paraffin, the latter in water. Both operate on single phase with input specified at 110, 220, 440 or 550 volts. Rating is 4 to 12 kw. Mounting flange is 5⅜ in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 10739

TO MAKE AND INSTALL V-BELTS IN MINUTES WITH **BRAMMER**

You can measure, couple, and install Brammer "V" Link Belting in minutes without dismantling, fuss, or special skill. Slashes down-time. Adjusts simply.

NEW IMPROVED BRAMMER BELTS GIVE YOU THESE NEW ADVANTAGES

NEW PRE-STRETCHING — NEW BRAMMER TOOL
NEW SIZE-IDENTIFICATION — NEW IMPROVED COMPOUND
NEW PERMALIFE RIVET — NEW GREEN FOR NEOPRENE

WRITE TODAY FOR SAMPLE, CATALOG!

BRAMMER CORPORATION
684 Broadway
New York, N.Y.

If you write maker identify as IEN - 10740

NOW WHAT?

Diversatility SCORES AGAIN!

A New BUT Thoroughly Proven

VALVAIR SOLENOID

PILOT-OPERATED CONTROL VALVE

for a myriad of uses!

Expect and get 20,000,000 cycles and more without maintenance. Most compact — extremely small, weighs very little. Just one moving part — the acme of simplicity and trouble-free performance. Complete line—30 valves in all. Get all the details NOW.

More information next month

ASK ON YOUR LETTERHEAD FOR BULLETIN "Q-9"

VALVAIR CORPORATION, 947 Beardsley Ave., Akron 11, Ohio
AFFILIATE: SINCLAIR-COLLINS VALVE CO.
REPRESENTATIVES IN PRINCIPAL CITIES

Rely Upon Valvair — 2-WAY — 3-WAY — 4-WAY

If you write maker identify as IEN - 10741

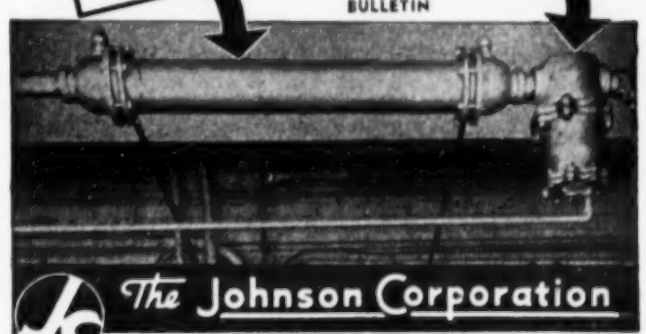
Here is the pair for clean, dry air . .

JOHNSON AFTERCOOLER
Used where moisture is vaporized by the heat of compression. Circulates cooling water around the line, condenses the oil and water vapor so Separator can remove them. Simple in design, highly efficient in performance.

SIZES FOR ALL NEEDS

JOHNSON SEPARATOR
Removes more than 99% of all water, dirt and oil from compressed air or steam. Combines the two best principles of separation—first allows air to expand slightly, then changes flow direction with the "Thousand Baffles". Model illustrated is the newest idea in separator design, with self-draining trap mechanism built right in.

WRITE FOR BULLETIN

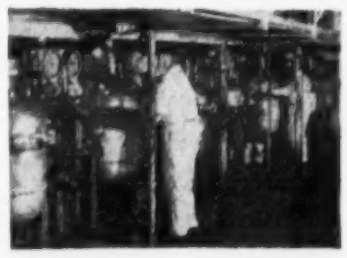


The Johnson Corporation
846 Wood Street, Three Rivers, Mich.

If you write maker identify as IEN - 10742

GUARD AGAINST COSTLY CORROSION

STOP RUST WITH STONCOTE

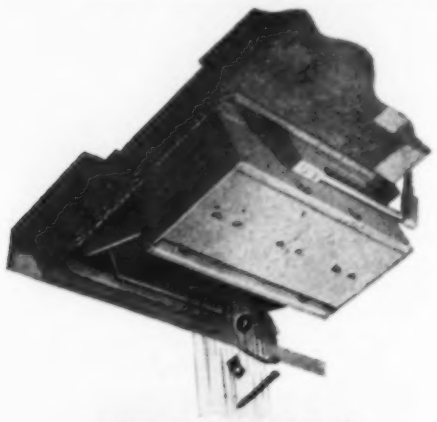


STONHARD STONCOTE is a flexible protective coating for easy application to all maintenance areas wherever corrosion is a special problem. STONCOTE provides a tough, non-oxidizing, acid, alkali, oil and water-resistant film over concrete, metal or wood. Comes in colors, dries in one-half hour, can be brushed or sprayed. Ideal for Breweries, Bottlers, Dairies and Canneries. Write for *free* STONCOTE Booklet.

STONHARD COMPANY
Building Maintenance Materials Since 1922
102 Stonhard Bldg., 1306 Spring Garden Street, Phila. 23, Pa.

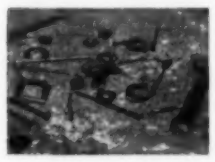
Please send me your STONCOTE Booklet: 102/9/53
Name .....
Company .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 10743



TRAPPED!

That tramp iron isn't going anywhere — it won't contaminate the product or get into expensive machinery and create serious damage. It has been *trapped — stopped*, effectively and efficiently with a *Stearns Electro Spout Magnet*.



IN JUST 4 HOURS OF OPERATION

Look at that pile of junk! A Stearns Electro Spout Magnet removed it from the flow of material of a leading malt company in just 4 hours! A Stearns Spout Magnet can do the same thing for you.

Write today for Stearns Electro and Permanent Spout Magnet literature and specifications.

1014

MAGNETIC EQUIPMENT FOR ALL INDUSTRY

STEARNS MAGNETS

STEARNS MAGNETIC, INC.
626 South 28th Street, Milwaukee 46, Wis.

If you write maker identify as IEN - 10744

WHY THIS NEW CONVEYOR SECTION

CAN NEVER BECOME OBSOLETE!

YOU *never* take chances of a "misfit" when you order A-F *Live Rail* Sections. They can be easily and quickly dis-assembled by anyone and set up in different widths and wheel patterns to meet new problems — or as experience indicates — portable or permanent . . . Now available in sections or "single" *Live Rails*, 5 ft. and 10 ft. lengths and 45° and 90° curves . . . Versatile . . . lightest weight, lowest cost wheel conveyor . . . Write for FREE catalog — today!

LIVE RAIL*

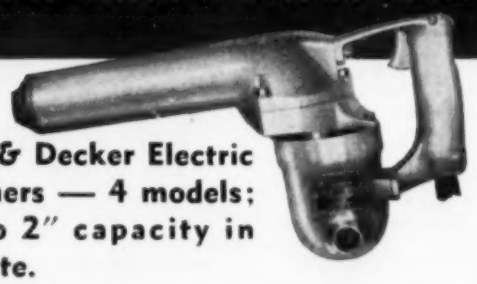
A NEW CONCEPT IN MOVEMENT

* *Design and Mechanical Patents Pending*

A-F THE ALVEY-FERGUSON COMPANY
First In Product Handling Since 1901
343 Disney St. Cincinnati 9, Ohio

If you write maker identify as IEN - 10745

NEED A HAMMER?
Switch to BLACK & DECKER Power!



Black & Decker Electric Hammers — 4 models; ½" to 2" capacity in concrete.

BLACK & DECKER ELECTRIC HAMMERS pack plenty of punch for high-speed drilling and channeling in concrete, stone or brick; doing light demolition; removing rust and scale from metal; driving spikes; scuffing concrete surfaces. Deliver thousands of hammer blows per minute. Light weight, husky, completely self-contained, no transformers needed. See your nearby B&D Distributor. Write for free catalog to: THE BLACK & DECKER MFG. CO., 608 Pennsylvania Ave., Towson 4, Md.

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker PORTABLE ELECTRIC TOOLS

"I WISH I HAD-"

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

EXHIBITS . . "I wish we knew the source for a covering for conference room walls on which papers can be put against the wall for exhibit by smoothing the paper against a felt like surface to which it attaches by vacuum. We have heard of this covering, but cannot locate its manufacturer." **IEN W-73**

NEW PRODUCTS . . "I wish we had contact with companies at present operating successfully in manufacture of miniature electronic components and precision production instruments so we could discuss with them the advantages to be gained by affiliating themselves with us in our program to diversify our own products. Our sales in 1952 were about $51,000,000. We are more interested in "going concerns" than we are in new inventions that are not as yet in production. We have prepared an "enterprises wanted" brochure which gives details. We are located in Illinois." **IEN W-74**

STAINLESS STEEL . . "I wish we had a source from which we could purchase Type 430 stainless steel in No. 2 or No. 28 finish or better in the form of cut-offs, trimmings, blanks, odd shapes, offals, discontinued sizes either in coils or straight lengths. The material to be sorted to gage only and be in boxes or skids and shipped by open type truck to our plant in Chicago. We are interested in 24 to 20 gage 1½ in. in width or wider by 7½ in. in length or longer and in 19 to 16 gage 1½ in. in width or wider and 8½ in. in length or longer." **IEN W-75**

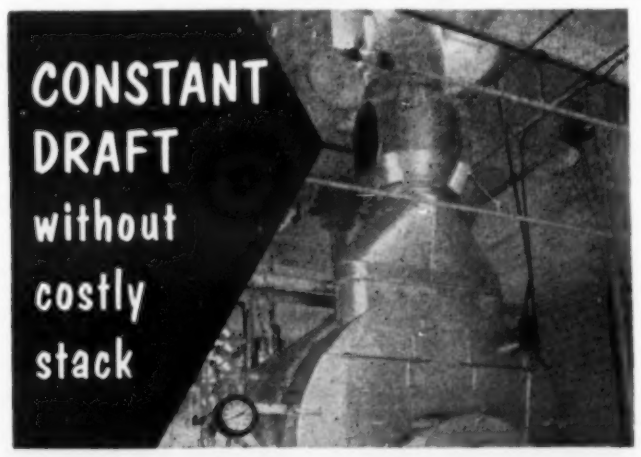
SURPLUS . . "I wish we had a buyer for all or a part of our surplus stock of 1,112 "Winter" tapper taps. The size is $\frac{9}{16}$ in.—12 thread. The stock is in Mexico City." **IEN W-76**

PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 10746



Induced Draft Bifurcator Fans provide constant draft for boilers and furnaces at a fraction of the cost of a suitable stack. These fan units install just like a flanged section of breeching. Fan motor, in chamber isolated from flue gases, is always clean, cool and accessible. Available in 24 sizes. Phone your DeBothezat representative or write for illustrated catalog on Induced Draft Bifurcator Fans.

DeBothezat Fans

Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

If you write maker identify as IEN - 10747

LIQUID LEVEL

Indicators
Recorders
Controllers

The completeness of the Foxboro Line is your assurance of *unbiased* recommendations on instruments to indicate, record, or control liquid level. Whatever type of system you require (bubble tube, differential pressure, float, diaphragm box) . . . whatever your problem (such as turbulent, viscous, or corrosive liquids, whether in open or pressured vessels) — Foxboro offers the most efficient instruments for the job. Why not consult Foxboro first — and be sure! Write The Foxboro Company, 429 Norfolk St., Foxboro, Mass., U.S.A.

FOXBORO Instruments
REG. U. S. PAT. OFF.

If you write maker identify as IEN - 10748

You Can Take the Word of 50,000 Firms

That SPEED SWEEP Floor Brushes Sweep Cleaner, Faster and Outlast Ordinary Brushes

Unique in design and construction, Speed Sweep so far outperforms and outlasts other floor brushes that over half of the nation's top rated firms use Speed Sweep under widely diversified sweeping conditions. We know Speed Sweep can do a better job for you, too. In fact, we guarantee it. We invite a trial order on that basis. Write for complete facts, including styles, sizes and prices today.

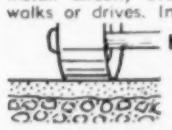
MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22 STREET, MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN - 10749

NEW FLOORS
In 24 Hours

HARD MASTIC
BONDS PERFECTLY — NEVER COMES LOOSE
NO CHIPPING REQUIRED

install directly over your old concrete, wood, brick or stone floors, walks or drives. Interior or Exterior.



HEAVY DUTY • DUSTPROOF
WATERPROOF • RESTFUL
FIRE-RESISTANT • QUIET
SLIP PROOF • SANITARY

"PERMAFLEX" resurfaced areas will not rut under 3000 lbs. pressure per square inch.

Many users apply "PERMAFLEX" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

OLD MASTICS RUT and DENT under 300 lbs. per square inch.

The most severe trucking conditions in 1000 of the largest industrial plants show no destructive effect on "PERMAFLEX" after years of use. Every conceivable trucking condition was fully met.

AMAZING! UNBELIEVABLE! Until you try "PERMAFLEX"!

Users include U. S. Steel, General Motors, Chrysler, Remington Arms, General Electric, Western Electric, Westinghouse, Beechnut Packing and leading railroads.

Test 100 square feet and be convinced.
Write for literature and trial offer.

SALES:—
Atlanta—Main 4110
Baltimore—Belmont 3770
Chicago—Fulton 5-4666
Detroit—Tuxedo 5-5500
New York—Wis. 7-5474
Norfolk—2-9035
St. Louis—Lucas 3700
San Francisco—Gar. 1-3196

INSTALL COMPLETE 15c per square foot

PERMAFLEX PRODUCTS COMPANY
1846 NORTH FRONT STREET, PHILA. 22, PA.